SERVICE MANUAL

ELECTRONIC MODULAR CUBES

N 131 M

N 201 M

N 301 M

N 401 M

N 501 M

ISO 9001
Cert. N° 0412/2

OUR SYSTEMS COMPLY WITH EEC DIRECTIVE 73/23 - 89/336 CEE

Icematic®

SERVICE MANUAL

Cod. 71503493/0 - **Rev.001** - GB - 01/2006

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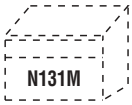
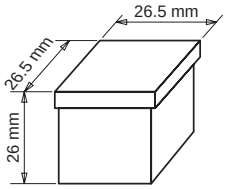
SPECIFICATIONS

MODULAR CUBER N 131 M





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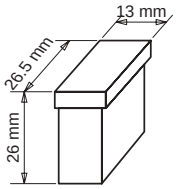


HALF DICE

GB

Produzione di ghiaccio in 24 ore fino a
Ice produced for 24 hours up to
Eisproduktion in 24 Stunden bis zu
Production de glace en 24 h jusqu'à
Produccion de hielo en las 24 horas hasta

kg. 140

Raffreddamento unità condensatrice	**aria**	**o acqua: consumo n. 50 litri per ora***
Condensing unit cooling	**air**	**or water: consumption n. 50 litres per hour***
Kondensatoreinheit	**Luft**	**oder Wasser: Verbrauch n. 50 liter pro Stunde***
Refroidissement de l'unité de condensation	**air**	**ou eau: consommation n. 50 litres par heure***
Refrigeración de la unidad condensadora	**aire**	**o agua: consumo n. 50 litros para hora***

Potenza assorbita/Absorbed power/Leistungsaufnahme
Puissance absorbée/Potencia Absorbida

W 780

Refrigerante/Refrigerant/Kältemittel
Réfrigérant/Refrigerant

R 404a

Attacco entrata acqua/Water iniet connection
Anschluss für Wasserzufluss/Prise entrée d'eau/conexión entrada agua

3/4" Gas

Attacco scarico acqua/Water output connection
Anschluss für Wasserabfluss/Prise écoulement d'eau
Conexión desague

mm. Ø 20

Alimentazione monofase/Single phase input/
Einphasige Spannung/Alimentation monophase
Alimentación monofásica

220V-240V - 50 Hz

Alimentazione voltaggi speciali:	**a richiesta**
Extra voltages:	**on request**
Andere Spannungen:	**Lieferbar auf Wunsch**
Alimentation voltages spéciaux:	**sur demande**
Otros voltajes especiales:	**según pedido**

Carrozzeria
External structure
Ausfühnrung
Carrosserie
Carroceria

inox

Peso netto/Net weight/Netto Gewcht
Poids net/Peso neto

kg. 51

(*) con temperatura acqua 15 °C
with water temperature 15 °C
mit Wassertemperatur 15 °C
avec température eau 15 °C
con temperatura agua 15 °C

PRODUZIONE DI GHIACCIO
ICE PRODUCTION
EIS PRODUKTION
PRODUCTION DE GLACE
PRODUCICON DE HIELO

RAFFR. AD ACQUA/WATER COOLED
WASSERGEKÜHLT/REFR. A EAU
REFR. A AGUA

Temperatura acqua/Water temperature
Wassertemperatur/Température eau
Temperatura agua

Temperatura ambiente / Ambient temperature / Raumtemperatur / Température anbiante / Temperatura ambiente	°C	32°	21°	15°	10°	
	10°	103	117	125	130	kg
	21°	98	113	120	125	kg
	32°	91	106	112	118	kg
	38°	85	100	106	110	kg

Prod. ghiaccio in 24 h/Ice prod. per 24 h
Eisprod. in 24 h/Prod. de glace en 24 h
Prod. de hielo en 24 h

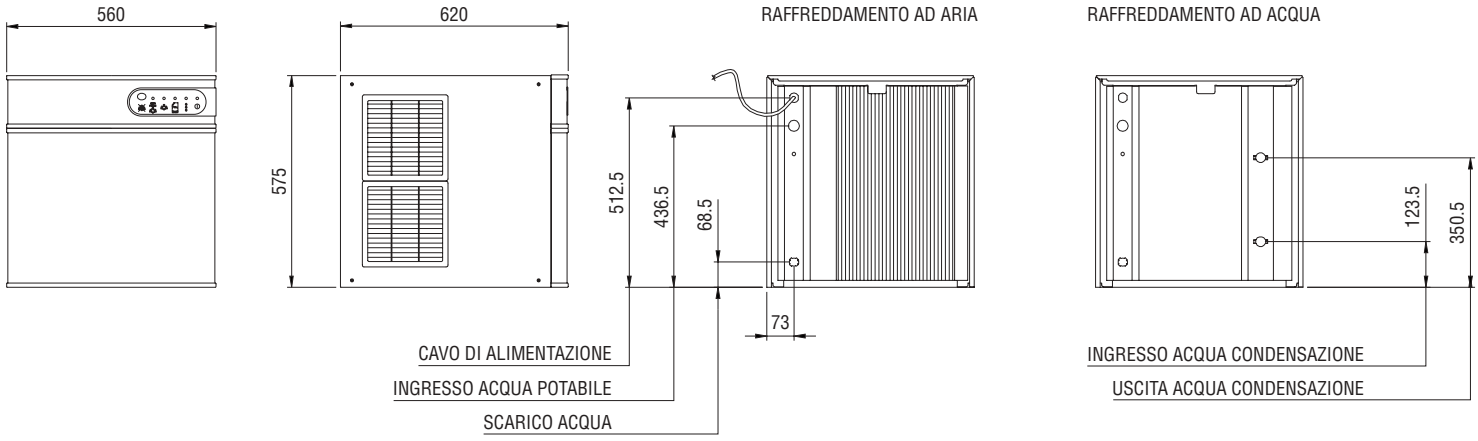
RAFFR. AD ARIA/AIR COOLED
LUFTGEKÜHLT/REFR. A AIR
REFR. A AIRE

Temperatura acqua/Water temperature
Wassertemperatur/Température eau
Temperatura agua

Temperatura ambiente / Ambient temperature / Raumtemperatur / Température anbiante / Temperatura ambiente	°C	32°	21°	15°	10°	
	10°	110	127	134	140	kg
	21°	104	119	125	130	kg
	32°	83	93	97	100	kg
	38°	70	76	78	80	kg

Prod. ghiaccio in 24 h/Ice prod. per 24 h
Eisprod. in 24 h/Prod. de glace en 24 h
Prod. de hielo en 24 h

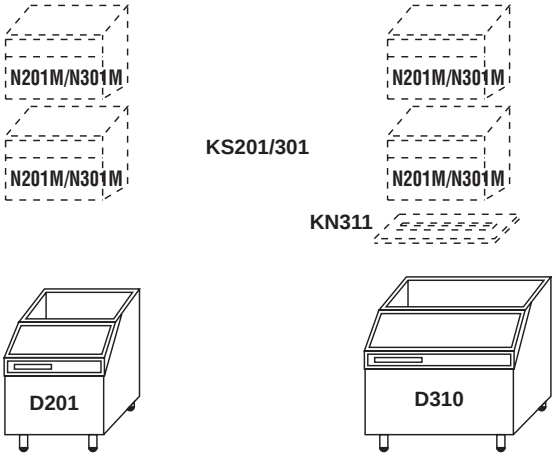
Dimensioni / Dimensions / Masse / Dimensions / Dimensiones

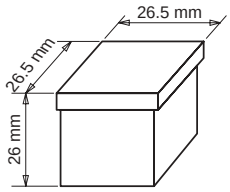


I MODELLI E LE SPECIFICHE POSSONO ESSERE CAMBIATI IN QUALUNQUE MOMENTO SENZA PREAVVISO
MODELS AND SPECIFICATIONS ARE SUBJECT TO BE CHANGED WITHOUT NOTICE
WIR BEHALTEN DAS RECHT VOR JEDERZEIT ANDERUNGEN DER MODELLE UND DER TECHNISCHEN ANGABEN VORZUNEHMEN
LES MODELES ET CARACTERISTIQUES DES APPAREILS PEUVENT ETRE CHANGES SANS PREAVIS
LOS MODELOS Y LAS ESPECIFICACIONES PODRAN MODIFICARSE EN CUALQUIER SIN PREVIO AVISO

SPECIFICATIONS

MODULAR CUBER N 201 M





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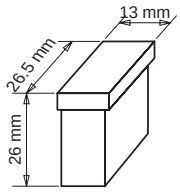

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Produzione di ghiaccio in 24 ore fino a
Ice produced for 24 hours up to
Eisproduktion in 24 Stunden bis zu
Production de glace en 24 h jusqu'à
Produccion de hielo en las 24 horas hasta

kg. 215

Raffreddamento unità condensatrice	**aria**	**o acqua: consumo n. 65 litri per ora***
Condensing unit cooling	**air**	**or water: consumption n. 65 litres per hour***
Kondensatoreinheit	**Luft**	**oder Wasser: Verbrauch n. 65 liter pro Stunde***
Refroidissement de l'unité de condensation	**air**	**ou eau: consommation n. 65 litres par heure***
Refrigeración de la unidad condensadora	**aire**	**o agua: consumo n. 65 litros para hora***

Potenza assorbita/Absorbed power/Leistungsaufnahme
Puissance absorbée/Potencia Absorbida
W 1000

Refrigerante/Refrigerant/Kältemittel
Réfrigérant/Refrigerant
R 404a

Attacco entrata acqua/Water iniet connection
Anschluss für Wasserzufluss/Prise entrée d'eau/conexión entrada agua
3/4" Gas

Attacco scarico acqua/Water output connection
Anschluss für Wasserabfluss/Prise écoulement d'eau
Conexión desague
mm. Ø 20

Alimentazione monofase/Single phase input/
Einphasige Spannung/Alimentation monophase
Alimentación monofásica
220V-240V - 50 Hz

Alimentazione voltaggi speciali: **a richiesta**
Extra voltages: **on request**
Andere Spannungen: **Lieferbar auf Wunsch**
Alimentation voltages spéciaux: **sur demande**
Otros voltajes especiales: **según pedido**

Carrozzeria
External structure **standard (1)**
Ausführnrung **or inox**
Carrosserie
Carroceria

Peso netto/Net weight/Netto Gewcht
Poids net/Peso neto
kg. 70

(1) Pannelli in skinplate colore blu
Panles in skinplate blue coloured
Gehäuse aus-blauem skinplate
Panneaux en skinplate de coloeur bleau
Panelos en skinplate de color azur noche

(*) con temperatura acqua 15 °C
with water temperature 15 °C
mit Wassertemperatur 15 °C
avec température eau 15 °C
con temperatura agua 15 °C

PRODUZIONE DI GHIACCIO
ICE PRODUCTION
EIS PRODUKTION
PRODUCTION DE GLACE
PRODUCICON DE HIELO

RAFFR. AD ACQUA/WATER COOLED
WASSERGEKÜHLT/REFR. A EAU
REFR. A AGUA

Temperatura acqua/Water temperature
Wassertemperatur/Température eau
Temperatura agua

Temperatura ambiente / Ambient temperature / Raumtemperatur / Température ambiante / Temperatura ambiente	°C	32°	21°	15°	10°	
	10°	167	187	197	200	kg
	21°	163	182	192	197	kg
	32°	153	165	175	180	kg
	38°	146	159	165	170	kg

Prod. ghiaccio in 24 h/Ice prod. per 24 h
Eisprod. in 24 h/Prod. de glace en 24 h
Prod. de hielo en 24 h

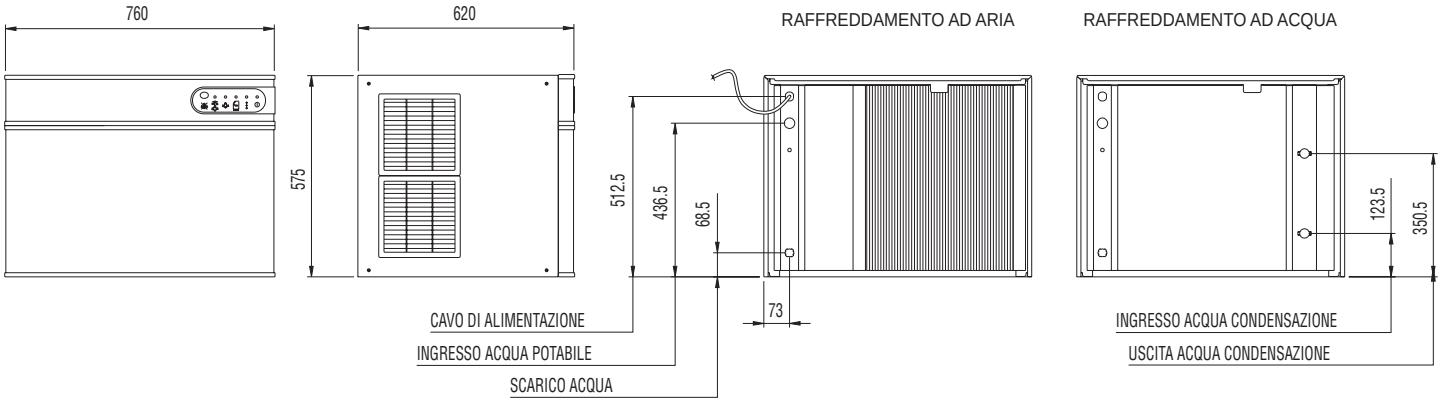
RAFFR. AD ARIA/AIR COOLED
LUFTGEKÜHLT/REFR. A AIR
REFR. A AIRE

Temperatura acqua/Water temperature
Wassertemperatur/Température eau
Temperatura agua

Temperatura ambiente / Ambient temperature / Raumtemperatur / Température ambiante / Temperatura ambiente	°C	32°	21°	15°	10°	
	10°	175	195	207	215	kg
	21°	165	186	195	200	kg
	32°	132	146	148	152	kg
	38°	118	125	128	132	kg

Prod. ghiaccio in 24 h/Ice prod. per 24 h
Eisprod. in 24 h/Prod. de glace en 24 h
Prod. de hielo en 24 h

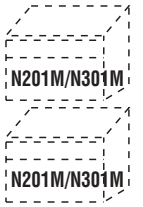
Dimensioni / Dimensions / Masse / Dimensions / Dimensiones

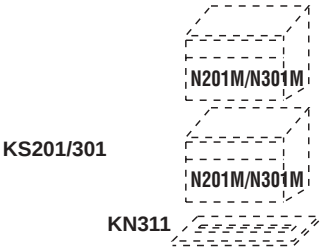


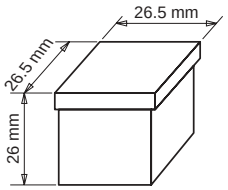
I MODELLI E LE SPECIFICHE POSSONO ESSERE CAMBIATI IN QUALUNQUE MOMENTO SENZA PREAVVISO
MODELS AND SPECIFICATIONS ARE SUBJECT TO BE CHANGED WITHOUT NOTICE
WIR BEHALTEN DAS RECHT VOR JEDERZEIT ANDERUNGEN DER MODELLE UND DER TECHNISCHEN ANGABEN VORZUNEHMEN
LES MODELES ET CARACTERISTIQUES DES APPAREILS PEUVENT ETRE CHANGES SANS PREAVIS
LOS MODELOS Y LAS ESPECIFICACIONES PODRAN MODIFICARSE EN CUALQUIER SIN PREVIO AVISO

SPECIFICATIONS

MODULAR CUBER N 301 M







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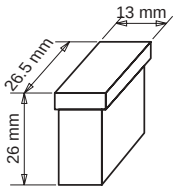

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Produzione di ghiaccio in 24 ore fino a **Ice produced for 24 hours up to** **Eisproduktion in 24 Stunden bis zu** **Production de glace en 24 h jusqu'à** **Produccion de hielo en las 24 horas hasta**		**kg. 320**
Raffreddamento unità condensatrice **Condensing unit cooling** **Kondensatoreinheit** **Refroidissement de l'unité de condensation** **Refrigeración de la unidad condensadora**	**aria** **air** **Luft** **air** **aire**	**o acqua: consumo n. 95 litri per ora*** **or water: consumption n. 95 litres per hour*** **oder Wasser: Verbrauch n. 95 liter pro Stunde*** **ou eau: consommation n. 95 litres par heure*** **o agua: consumo n. 95 litros para hora***
Potenza assorbita/Absorbed power/Leistungsaufnahme **Puissance absorbée/Potencia Absorbida**		**W 1600**
Refrigerante/Refrigerant/Kältemittel **Réfrigérant/Refrigerant**		**R 404a**
Attacco entrata acqua/Water iniet connection **Anschluss für Wasserzufluss/Prise entrée d'eau/conexión entrada agua**		**3/4" Gas**
Attacco scarico acqua/Water output connection **Anschluss für Wasserabfluss/Prise écoulement d'eau** **Conexión desague**		**mm. Ø 20**
Alimentazione monofase/Single phase input/ **Einphasige Spannung/Alimentation monophase** **Alimentación monofásica**		**220V-240V - 50 Hz**
Alimentazione voltaggi speciali: **Extra voltages:** **Andere Spannungen:** **Alimentation voltages spéciaux:** **Otros voltajes especiales:**		**a richiesta** **on request** **Lieferbar auf Wunsch** **sur demande** **según pedido**
Carrozzeria **External structure** **Ausfühnrung** **Carrosserie** **Carroceria**		**standard (1)** **or inox**
Peso netto/Net weight/Netto Gewcht **Poids net/Peso neto**		**kg. 73**

(1) Pannelli in skinplate colore blu
Panles in skinplate blue coloured
Gehäuse aus-blauem skinplate
Panneaux en skinplate de coloeur bleau
Panelos en skinplate de color azur noche

(*) con temperatura acqua 15 °C
with water temperature 15 °C
mit Wassertemperatur 15 °C
avec température eau 15 °C
con temperatura agua 15 °C

PRODUZIONE DI GHIACCIO
ICE PRODUCTION
EIS PRODUKTION
PRODUCTION DE GLACE
PRODUCICON DE HIELO

RAFFR. AD ACQUA/WATER COOLED
WASSERGEKÜHLT/REFR. A EAU
REFR. A AGUA

Temperatura acqua/Water temperature
Wassertemperatur/Température eau
Temperatura agua

Temperatura ambiente / Ambient temperature / Raumtemperatur / Température ambiante / Temperatura ambiente	°C 32°	21°	15°	10°	
10°	250	270	275	280	kg
21°	245	265	270	275	kg
32°	235	255	260	265	kg
38°	225	240	245	250	kg

Prod. ghiaccio in 24 h/Ice prod. per 24 h
Eisprod. in 24 h/Prod. de glace en 24 h
Prod. de hielo en 24 h

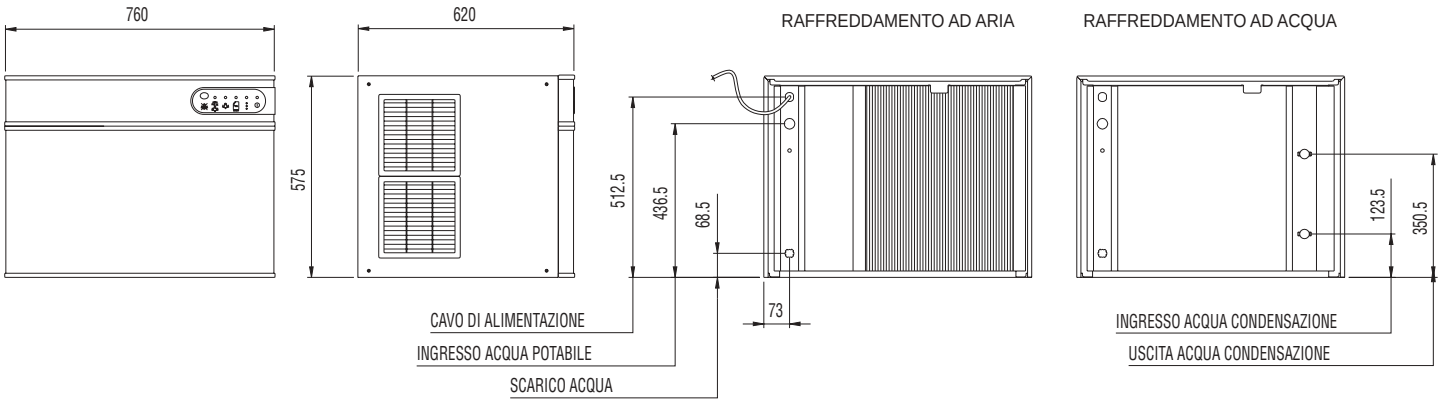
RAFFR. AD ARIA/AIR COOLED
LUFTGEKÜHLT/REFR. A AIR
REFR. A AIRE

Temperatura acqua/Water temperature
Wassertemperatur/Température eau
Temperatura agua

Temperatura ambiente / Ambient temperature / Raumtemperatur / Température ambiante / Temperatura ambiente	°C 32°	21°	15°	10°	
10°	260	290	305	320	kg
21°	240	265	275	280	kg
32°	195	210	220	225	kg
38°	174	180	188	190	kg

Prod. ghiaccio in 24 h/Ice prod. per 24 h
Eisprod. in 24 h/Prod. de glace en 24 h
Prod. de hielo en 24 h

Dimensioni / Dimensions / Masse / Dimensions / Dimensiones



I MODELLI E LE SPECIFICHE POSSONO ESSERE CAMBIATI IN QUALUNQUE MOMENTO SENZA PREAVVISO
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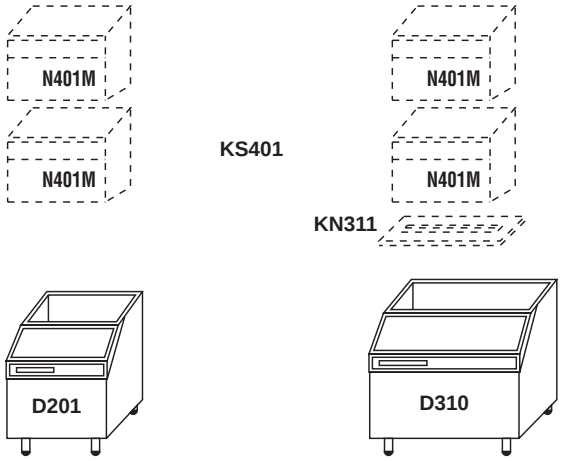
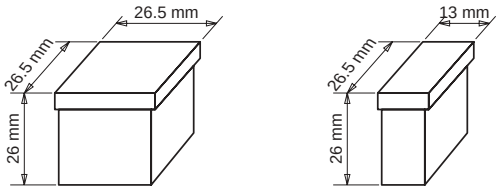
LES MODELES ET CARACTERISTIQUES DES APPAREILS PEUVENT ETRE CHANGES SANS PREAVIS
LOS MODELOS Y LAS ESPECIFICACIONES PODRAN MODIFICARSE EN CUALQUIER SIN PREVIO AVISO

SPÉCIFICATIONS

MODULAR CUBER N 401 M





STANDARD **HALF DICE**

GB

Produzione di ghiaccio in 24 ore fino a
Ice produced for 24 hours up to
Eisproduktion in 24 Stunden bis zu
Production de glace en 24 h jusqu'à
Produccion de hielo en las 24 horas hasta

kg. 405

Raffreddamento unità condensatrice	**aria**	**o acqua: consumo n. 110 litri per ora***
Condensing unit cooling	**air**	**or water: consumption n. 110 litres per hour***
Kondensatoreinheit	**Luft**	**oder Wasser: Verbrauch n. 110 liter pro Stunde***
Refroidissement de l'unité de condensation	**air**	**ou eau: consommation n. 110 litres par heure***
Refrigeración de la unidad condensadora	**aire**	**o agua: consumo n. 110 litros para hora***

Potenza assorbita/Absorbed power/Leistungsaufnahme
Puissance absorbée/Potencia Absorbida

W 2300

Refrigerante/Refrigerant/Kältemittel
Réfrigérant/Refrigerant

R 404a

Attacco entrata acqua/Water iniet connection
Anschluss für Wasserzufluss/Prise entrée d'eau/conexión entrada agua

3/4" Gas

Attacco scarico acqua/Water output connection
Anschluss für Wasserabfluss/Prise écoulement d'eau
Conexión desague

mm. Ø 20

Alimentazione trifase/Three phase input/
Dreiphasige Spannung/Alimentation triphase
Alimentación trifásica

380V-400V / 50 Hz

Alimentazione voltaggi speciali:	**a richiesta**
Extra voltages:	**on request**
Andere Spannungen:	**Lieferbar auf Wunsch**
Alimentation voltages spéciaux:	**sur demande**
Otros voltajes especiales:	**según pedido**

Carrozzeria
External structure
Ausfühnrung **inox**
Carrosserie
Carroceria

Peso netto/Net weight/Netto Gewcht
Poids net/Peso neto

kg. 94

(*) con temperatura acqua 15 °C
with water temperature 15 °C
mit Wassertemperatur 15 °C
avec température eau 15 °C
con temperatura agua 15 °C

PRODUZIONE DI GHIACCIO
ICE PRODUCTION
EIS PRODUKTION
PRODUCTION DE GLACE
PRODUCICON DE HIELO

RAFFR. AD ACQUA/WATER COOLED
WASSERGEKÜHLT/REFR. A EAU
REFR. A AGUA

Temperatura acqua/Water temperature
Wassertemperatur/Température eau
Temperatura agua

Temperatura ambiente / Ambient temperature / Raumtemperatur / Température ambiante / Temperatura ambiente	°C	32°	21°	15°	10°	
	10°	335	367	380	385	kg
	21°	330	361	375	380	kg
	32°	316	347	358	364	kg
	38°	308	336	347	353	kg

Prod. ghiaccio in 24 h/Ice prod. per 24 h
Eisprod. in 24 h/Prod. de glace en 24 h
Prod. de hielo en 24 h

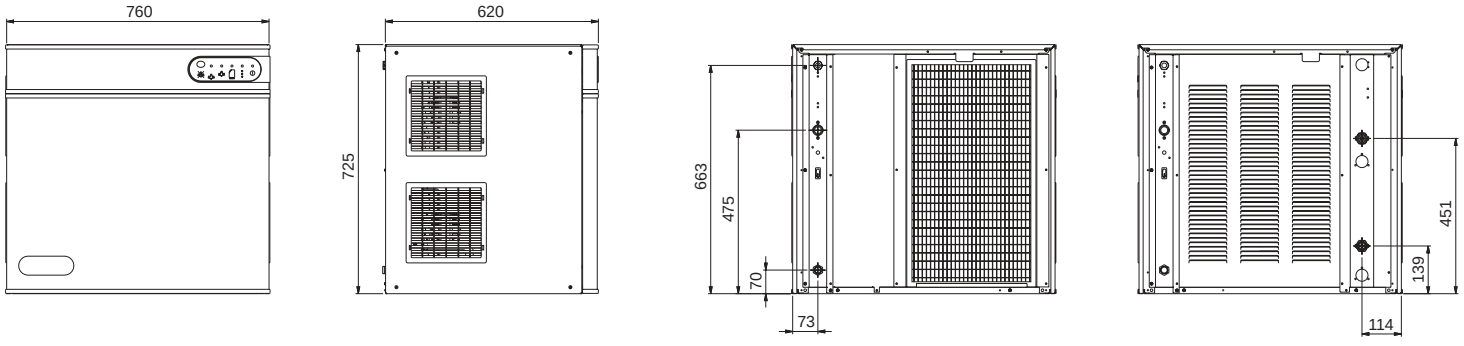
RAFFR. AD ARIA/AIR COOLED
LUFTGEKÜHLT/REFR. A AIR
REFR. A AIRE

Temperatura acqua/Water temperature
Wassertemperatur/Température eau
Temperatura agua

Temperatura ambiente / Ambient temperature / Raumtemperatur / Température ambiante / Temperatura ambiente	°C	32°	21°	15°	10°	
	10°	350	375	390	405	kg
	21°	330	356	370	382	kg
	32°	285	310	318	326	kg
	38°	240	265	272	280	kg

Prod. ghiaccio in 24 h/Ice prod. per 24 h
Eisprod. in 24 h/Prod. de glace en 24 h
Prod. de hielo en 24 h

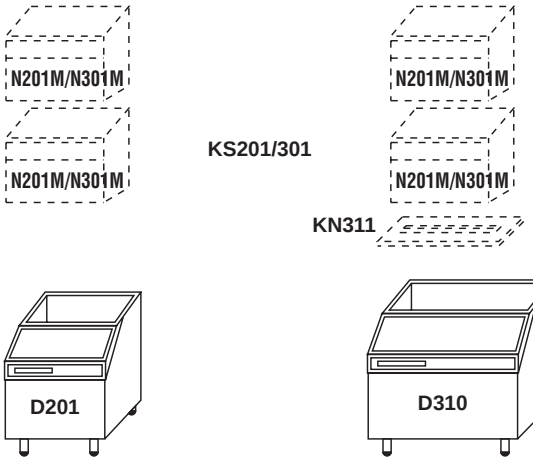
Dimensioni / Dimensions / Masse / Dimensions / Dimensiones

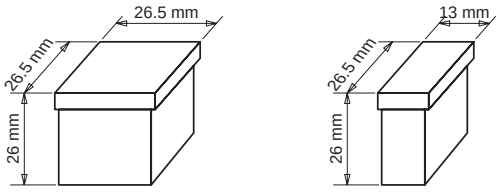


I MODELLI E LE SPECIFICHE POSSONO ESSERE CAMBIATI IN QUALUNQUE MOMENTO SENZA PREAVVISO
MODELS AND SPECIFICATIONS ARE SUBJECT TO BE CHANGED WITHOUT NOTICE
WIR BEHALTEN DAS RECHT VOR JEDERZEIT ANDERUNGEN DER MODELLE UND DER TECHNISCHEN ANGABEN VORZUNEHMEN
LES MODELES ET CARACTERISTIQUES DES APPAREILS PEUVENT ETRE CHANGES SANS PREAVIS
LOS MODELOS Y LAS ESPECIFICACIONES PODRAN MODIFICARSE EN CUALQUIER SIN PREVIO AVISO

SPECIFICATIONS

MODULAR CUBER N 501 M





STANDARD **HALF DICE**

GB

Produzione di ghiaccio in 24 ore fino a
Ice produced for 24 hours up to
Eisproduktion in 24 Stunden bis zu
Production de glace en 24 h jusqu'à
Produccion de hielo en las 24 horas hasta

kg. 485

Raffreddamento unità condensatrice	**aria**	**o acqua: consumo n. 115 litri per ora***
Condensing unit cooling	**air**	**or water: consumption n. 115 litres per hour***
Kondensatoreinheit	**Luft**	**oder Wasser: Verbrauch n. 115 liter pro Stunde***
Refroidissement de l'unité de condensation	**air**	**ou eau: consommation n. 115 litres par heure***
Refrigeración de la unidad condensadora	**aire**	**o agua: consumo n. 115 litros para hora***

Potenza assorbita/Absorbed power/Leistungsaufnahme
Puissance absorbée/Potencia Absorbida

W 2500

Refrigerante/Refrigerant/Kältemittel
Réfrigérant/Refrigerant

R 404a

Attacco entrata acqua/Water iniet connection
Anschluss für Wasserzufluss/Prise entrée d'eau/conexión entrada agua

3/4" Gas

Attacco scarico acqua/Water output connection
Anschluss für Wasserabfluss/Prise écoulement d'eau
Conexión desague

mm. Ø 20

Alimentazione trifase/Three phase input/
Dreiphasige Spannung/Alimentation triphase
Alimentación trifásica

380V-400V - 50 Hz

Alimentazione voltaggi speciali:	**a richiesta**
Extra voltages:	**on request**
Andere Spannungen:	**Lieferbar auf Wunsch**
Alimentation voltages spéciaux:	**sur demande**
Otros voltajes especiales:	**según pedido**

Carrozzeria
External structure
Ausführnrung
Carrosserie
Carroceria

inox

Peso netto/Net weight/Netto Gewcht
Poids net/Peso neto

kg. 104

(*) con temperatura acqua 15 °C
with water temperature 15 °C
mit Wassertemperatur 15 °C
avec température eau 15 °C
con temperatura agua 15 °C

PRODUZIONE DI GHIACCIO
ICE PRODUCTION
EIS PRODUKTION
PRODUCTION DE GLACE
PRODUCICON DE HIELO

RAFFR. AD ACQUA/WATER COOLED
WASSERGEKÜHLT/REFR. A EAU
REFR. A AGUA

Temperatura acqua/Water temperature
Wassertemperatur/Température eau
Temperatura agua

Temperatura ambiente / Ambient temperature / Raumtemperatur / Température ambiante / Temperatura ambiente						
°C	32°	21°	15°	10°		
10°	375	410	435	450	kg	
21°	370	405	430	445	kg	
32°	365	395	420	435	kg	
38°	355	380	405	415	kg	

Prod. ghiaccio in 24 h/Ice prod. per 24 h
Eisprod. in 24 h/Prod. de glace en 24 h
Prod. de hielo en 24 h

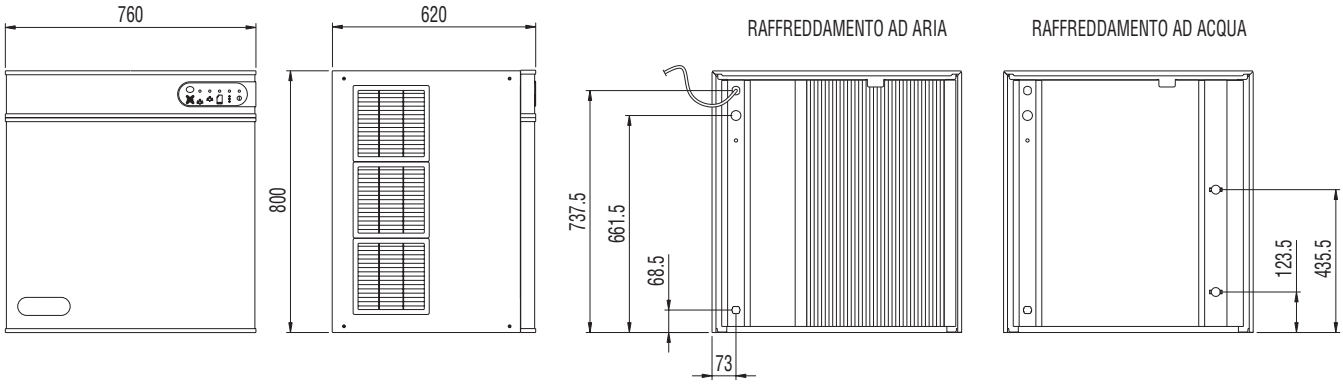
RAFFR. AD ARIA/AIR COOLED
LUFTGEKÜHLT/REFR. A AIR
REFR. A AIRE

Temperatura acqua/Water temperature
Wassertemperatur/Température eau
Temperatura agua

Temperatura ambiente / Ambient temperature / Raumtemperatur / Température ambiante / Temperatura ambiente						
°C	32°	21°	15°	10°		
10°	430	457	472	485	kg	
21°	408	432	445	456	kg	
32°	340	365	378	390	kg	
38°	300	315	322	330	kg	

Prod. ghiaccio in 24 h/Ice prod. per 24 h
Eisprod. in 24 h/Prod. de glace en 24 h
Prod. de hielo en 24 h

Dimensioni / Dimensions / Masse / Dimensions / Dimensiones



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FOR THE INSTALLER

INTRODUCTION

These instructions provide the specifications and the step-by-step procedures for the installation, start up and operation for the ICEMATIC Model N131M - N201M - N301M - N401M N501M Modular Cubers.
The Models N131M - N201M - N301M - N401M - N501M Modular Cubers are quality designed, engineering and constructed, and are thoroughly tested icemaking systems, providing the utmost in flexibility to fit the needs of a particular user.

INSTALLATION NOTE: *Allow 15 cm. minimum space at sides and back for ventilation and utility connections.*

STORAGE BIN
The N121M stack on top of ICEMATIC bin model D101. The N201M - N301M - N401 M - N501M stack onto ICEMATIC bin model D 201, D301

Refrigerant R 404 A
Charge per nameplate rating.

STANDARD LEGS: Furnished with storage bin. Four legs screw into mounting sockets on cabinet base. Provide 18.5 cm. (7'') minimum height including adjustable leveling foot.

IMPORTANT OPERATING REQUIREMENTS

	MINIMUM	MAXIMUM
Air Temperature	**10°C** (50°F)	**40°C** (100°F)
Water Temperature	**5°C** (40°F)	**35°C** (90°F)
Water Pressures	1 bar gauge	5 bar gauge
Electrical Voltage Variations Voltage rating specified on nameplate	-10%	+10%

Extended periods of operation exceeding these limitations constitues misuse under the terms of Manufacturer's Limited Warranty, resulting in a loss of warranty coverage.

SELECT LOCATION

The first step in installing the equipment is to select the location. The purchaser of the unit will have a desired spot in mind, check out that spot to insure that it is:

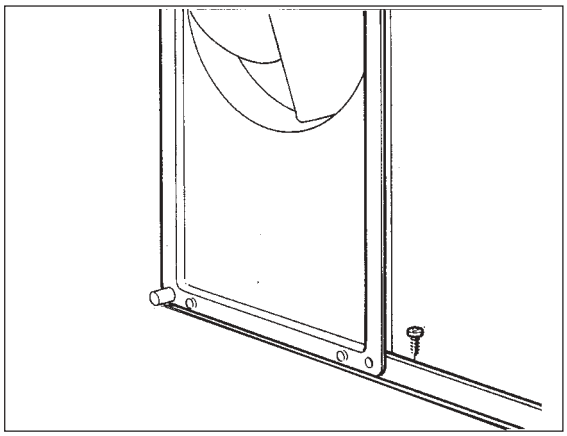
- indoors, in an environment that does not exceed the air and water temperature limitations for the equipment.
- that the necessary utilities are available including the correct voltage electrical power.
- that there be space around the installed machine for service, 15 cm. minimum left, right, and rear for air-cooled models.

STORAGE BIN

The Icematic bins for these units are the D101 - D201 - D301.
Other bins may be available with bin tops to vary the storage capacity. Lay the bin on its back, using cardboard from the carton to support it, screw in the legs.
Stand the bin upright, and correct any possible small tears in the machine mounting gasket with food grade silicone sealant.

ICE MACHINE

The use of a mechanical lift is recommended for lifting the uncrated icemaker onto the bin.
Remove front, top and sides panels.
Place the unit directly onto the bin, align it with the back of the bin. Locate the hardware package, take out two mounting screws, and use them to secure the Icemaker to the two sides of the bin. See illustration below.

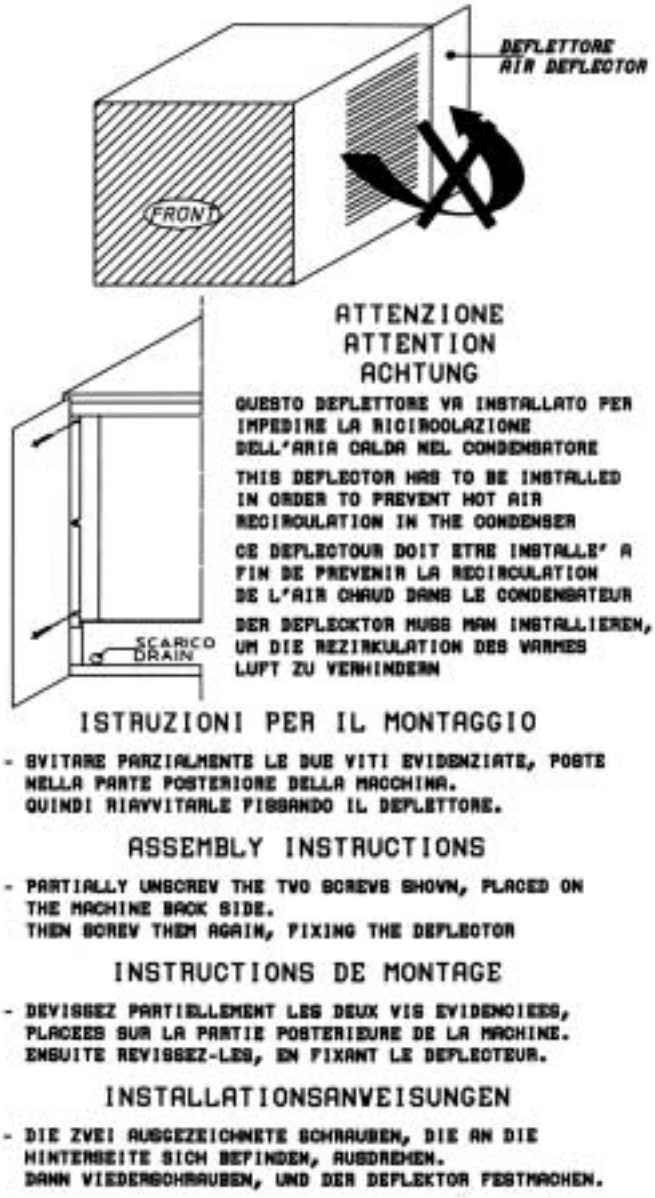


Remove all shipping material as well as the masking tapes from the ice deflector/evaporator cover.

Remove first the ice deflector/evaporator cover then the masking tape from the ice thickness sensor.

AIR BAFFLE

Install on the back side of the machine the air baffle as per instruction provided with it.


DEFLETTORE
AIR DEFLECTOR
FRONT
SCARICO
DRAIN
ATTENZIONE
ATTENTION
ACHTUNG
QUESTO DEFLETTORE VA INSTALLATO PER IMPEDIRE LA RICIRCOLAZIONE DELL'ARIA CALDA NEL CONDENSATORE
THIS DEFLECTOR HAS TO BE INSTALLED IN ORDER TO PREVENT HOT AIR RECIRCULATION IN THE CONDENSER
CE DEFLECTOUR DOIT ETRE INSTALLE' A FIN DE PREVENIR LA RECIRCULATION DE L'AIR CHAUD DANS LE CONDENSATEUR
DER DEFLECKTOR MUSS MAN INSTALLIEREN, UM DIE REZIRKULATION DES WARMES LUFT ZU VERHINDERN
ISTRUZIONI PER IL MONTAGGIO
- SVITARE PARZIALMENTE LE DUE VITI EVIDENZIATE, POSTE NELLA PARTE POSTERIORE DELLA MACCHINA. QUINDI RIAVVITARLE FISSANDO IL DEFLETTORE.
ASSEMBLY INSTRUCTIONS
- PARTIALLY UNSCREW THE TWO SCREWS SHOWN, PLACED ON THE MACHINE BACK SIDE. THEN SCREW THEM AGAIN, FIXING THE DEFLECTOR
INSTRUCTIONS DE MONTAGE
- DEVISSEZ PARTIELLEMENT LES DEUX VIS EVIDENCIEES, PLACEES SUR LA PARTIE POSTERIEURE DE LA MACHINE. ENSUITE REVISSEZ-LES, EN FIXANT LE DEFLECTEUR.
INSTALLATIONSANWEISUNGEN
- DIE ZWEI AUSGEZEICHNETE SCHRAUBEN, DIE AN DIE HINTERSEITE SICH BEFINDEN, AUSDREHEN. DANN WIEDERSCHRAUBEN, UND DER DEFLEKTOR FESTMACHEN.

STACKING INSTALLATION

To stack a second Icematic machine onto the present one, first remove the top panel from the lower machine. Add a bead of food grade silicone sealant to the top edges of the lower units freezing compartment. Lift the top machine onto the bottom

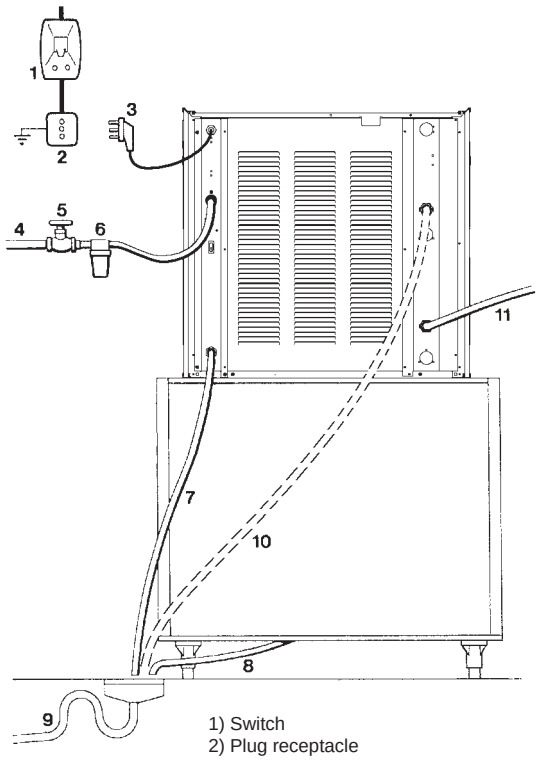
machine, (the use of a mechanical lift is recommended for this step). Align the two machines cabinets, and using the 2 screw from the top units, hardware package, fasten the two units together at the side cabinets.
Then make use of the Stacking Kit KS, to be mounted as per fitting instructions included in their package, respectively on N131M - N201M - N301M - N401M - N501M located in the bottom for proper conveying, of the ice cubes made by the top unit, into the storage bin. With food grade silicone perfectly seal the edge between the freezing compartment of the upper machine and of the bottom machine so to avoid any possible leak of water through the clearence in between.

FOR THE PLUMBER

CONFORM TO ALL APPLICABLE CODES

WATER INLET

AIR-COOLED MODELS: The recommended water supply is **cold** water connected to the - 3/4'' gas - male fitting at the back of the cabinet. Install a hand valve near the machine to control the water supply.



1) Switch
2) Plug receptacle
3) Electrical plug
4) Water inlet
5) Shut-off valve
6) Water filter
7) Water outlet line
8) Bin water outlet line
9) Open vented water drain
10) Water outlet from the condenser: water cooled version only.

When choosing the water supply for the ICE-MATIC Cuber, consideration should be given to:

A. Length of run.

B. Water clarity and purity.

C. Adequate water supply pressures.

Since water is the most important single ingredient in producing ice you cannot over emphasize the three items listed above. Low water pressure, below 1 bar may cause malfunction, of the icemaker unit. Water containing excessive minerals will tend to produce cloudy colored ice cubes, plus scale build-up on parts in the water system.
Heavily chlorinated water can be controlled using charcoal or carbon filters.

DRAINS

AIR-COOLED MODELS: There is one 20 mm. dia sump drain fitting at the back of the cabinet. Insulations in high humidity areas is recommended. The ideal drain receptacle would be a trapped and vented floor drain.
WATER-COOLED MODELS: Besides the above drain, **a separate** condenser drain must be run. Connect it to the - 3/4'' gas - condenser drain connection at the back of the cabinet.
STORAGE BIN: **A separate** gravity type drain needs to be run, similar to the air-cooled sump drain. **Insulation of this drain line is recommended.**

FOR THE ELECTRICIAN

ELECTRICAL CONNECTIONS

The unit come equipped with an electrical cord for power supply. The lead wires must be connected to an electrical plug that corresponds to the local electrical codes and requirements or to a separate two poles disconnect box with opening to the contacts of about 3 millimeters.
The disconnect box shoulds be placed close to the selected ice maker location to be easily and prompt reached.
Undersized wiring or unproperly installed electrical circuit will result in major problems and malfunctions.
Voltage variations shoud not exceed ten percent.

IMPORTANT - All plumbing and electrical connections must be made by licensed plumbers and electricians, this one must follow the electrical specifications printed on the ice maker nameplate.

NOTE: *All ICEMATIC Cubers require a neutral wire and a solid earth ground wire to prevent possible severe Electrical Shock Injury to individuals or extensive damage to equipments.*

FINAL CHECK LIST

1. Is the cabinet/bin level?

2. Is the cuber in a location where ambient temperatures are a minimum of 10°C (50-degrees F.) all year around and to not exceed a maximum of 40°C. (100°F.).

3. Is there at least a 15 cm. clearance behind and around the cabinet for all connections and for proper air circulation?

4. Have all electrical and piping connections been made?

5. Has the electrical power supply wiring been properly connected and the voltage tested and checked against the nameplate rating? Has the unit properly grounded.

6. Is the water supply line shutoff valve installed and opened and has the inlet water supply pressure been checked to insure a minimum of 1 bar without exceeding a maximum of 5 bar.

7. Have the compressor holddown bolts been checked to be sure the compressor is snug on the mounting pads.

8. Check all refrigerant lines and conduit lines to gard against vibration and possible failure.

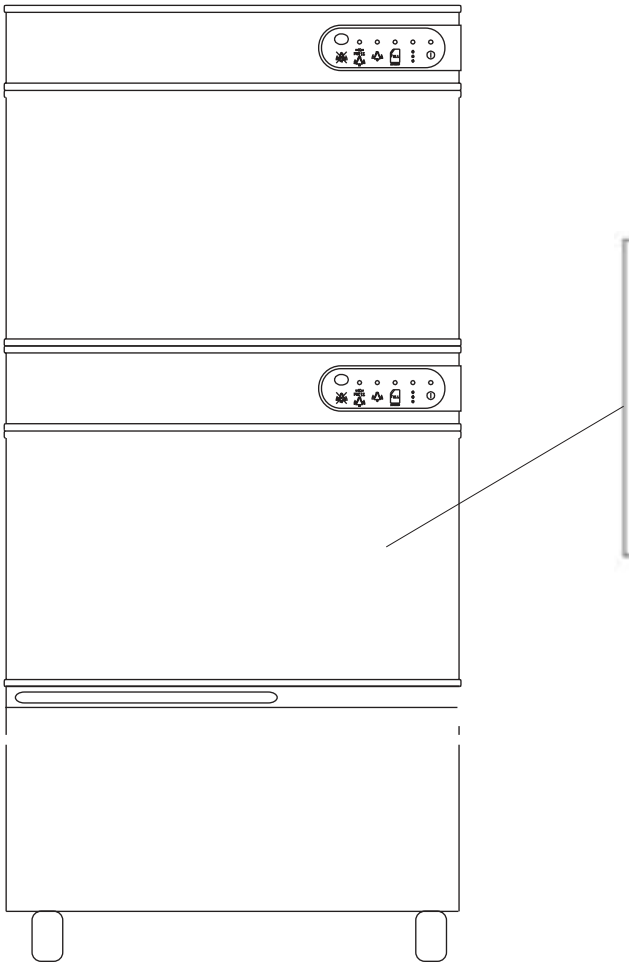
9. Has the cuber and the bin been wiped clean with clean damp cloths?

10. Has the owner/user been given the User Manual and instructed on how to operate the icemaker and the importance of periodic maintenance?

11. Has the owner/user been given the name and telephone number of the Authorized ICEMATIC Distributor or Service Agency serving him?

12. Has the Manufacturer's Registration Card been properly filled out?
Check for correct Model and Serial Numbers from nameplate, then mail the completed card to the Manufactured.

TYPICAL STACKING INSTALLATION



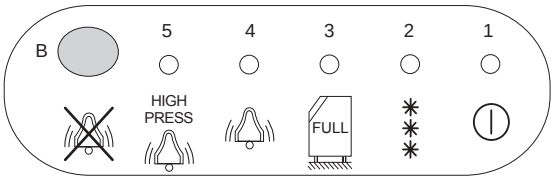
KIT STACKING KS 131: TO STACK 2 N 131
KIT STACKING KS 201-KS 301: TO STACK 2 N 201-N 301
KIT STACKING KS 401: TO STACK 2 N 401
KIT STACKING KS 501: TO STACK 2 N 501

START-UP

START-UP CYCLE

1. Open the water tap/valve and switch ON the power on the electrical supply line.

2. The machine enter in the Start Up mode with the PC Board energized as well as the **Green LED** of the machine under power.



The **Green LED** of machine in operation is energized too, **blinking fast for 40 seconds**.

3. During the Start Up cycle the components in operation are:
- Hot gas valve
- Water Drain Valve
- Water Pump

FREEZING CYCLE

1. After the Start Up cycle the machine enters directly into the Freezing cycle with the following components energized:
- Water Inlet valve
- Compressor
- Fan motor (in continuous operation for the first 3 minutes).

2. The LED energized are:
- Machine under power
- Machine in operation (steady)

3. Water is coming into the water through the Water Inlet Solenoid Valve till the water reservoir if filled up to the maximum level controlled by a Water Level Sensor.

4. 30 seconds later, the Water Pump starts up.

5. After 3 minutes from the start up of the freezing cycle, the Water Inlet Solenoid Valve is activated again for few seconds till the water reaches the maximum level so to reduce any possibility of slush ice formation.

6. In the meantime the condenser sensor starts to transmit the current to the PC Board keeping in operation the Fan Motor in ON-OFF mode or continuously according to the condenser temperature.

> ***NOTE:*** *Do not remove the evaporator deflector cover as it will cause the switching off of the machine at "STORAGE BIN FULL".*

7. The machine remains in the freezing cycle with the ice that become thicker till the two metal plates of the Ice Thickness Sensor are covered by the water cascading through the front surface of the ice plate.

8. When the Power is transmitted back to the PC Board continuously through the metal plates of the Ice Thickness Sensor for more then 6", the machine enters in the Pre-Harvest or directly into the Harvest Cycle mode according to:

- **FAN MOTOR IN ON-OFF MODE DURING THE PREVIOUS FREEZING CYCLE**

  RISE UP THE CUT IN TEMPERATURE OF THE CONDENSER SENSOR TO 38°C (FAN MOTOR OFF) AND EXTEND THE LENGTH OF FREEZING CYCLE BY 30" MORE THEN GO INTO HARVEST CYCLE

- **FAN MOTOR ALWAYS IN OPERATION DURING THE PREVIOUS FREEZING CYCLE**

  GO STRAIGHT TO THE HARVEST CYCLE

9. First freezing time will range between 15 and 20 minutes.
Longer time for temperature above 25°C and shorter time required when temperature are below 25°C.
Average complete cycle time is about 22 min.

HARVEST CYCLE

1. During the harvest cycle the components in operation are:
- Hot Gas valve
- Water Drain/Purge Valve
- Water Pump for the first 40"
- Compressor

and both

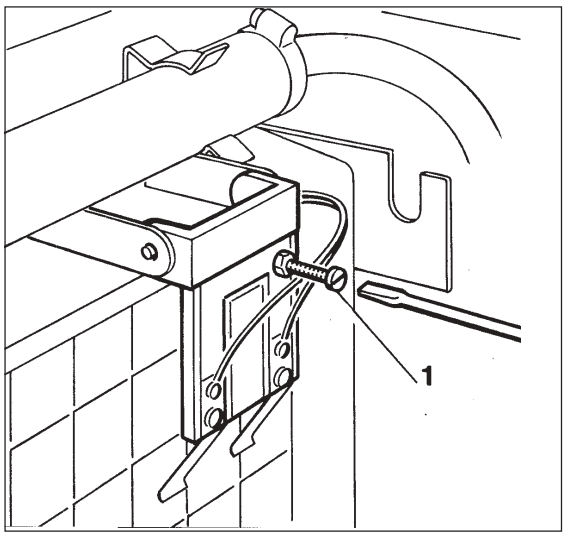
- Machine Under Power
- Machine in Operation

2. 30 seconds after the beginning of the Harvest Cycle, the Water Inlet Solenoid Valve is energized for 10 seconds only in order to have a short flush of fresh water into the sump while the Water Pump is still in operation.

3. The Fan Motor remains in OFF mode unless the Condenser Sensor probe rise up to more then 38°C (same set up as per end of freezing cycle).

4. When the ice plate is falling down from the evaporator, the magnetic switch is activated for a while providing the signal to the PC Board to restart a new freezing cycle.

5. Observe first ice cube harvest and check size of ice cubes; if an adjustment is required thread down or out screw N. 1 as shown on below illustration.



This screw position determines the distance between the sensor reeds and the egg-crate evaporator thus keeping the ice cube at a proper thickness.

NOTE: *This type of machine produce an "ICE PLATE" that breaks when falls down into the storage bin. Setting the ice thickness sensor in order* ***to have single ice cubes may cause malfunction of the machine.***

6. Observe second and third cube harvest.
Check if size and shape combination is correct.
In areas where extreme problem water conditions exist, filtering or purifyng equipment is recommended.

NOTE: *If water used is too soft, "demineralized" the ice thickness sensor might not be able to sense the water on its reeds, there by it will not switch the unit on harvest cycle.*
A safety system built in the P.C. Board switches the unit on harvest cycle whenever the freezing period gets longer then 30' or 40'.

NOTE: *To assure a correct operation of the machine the water must have a* ***minimum electrical conductivity of 20 µs.***

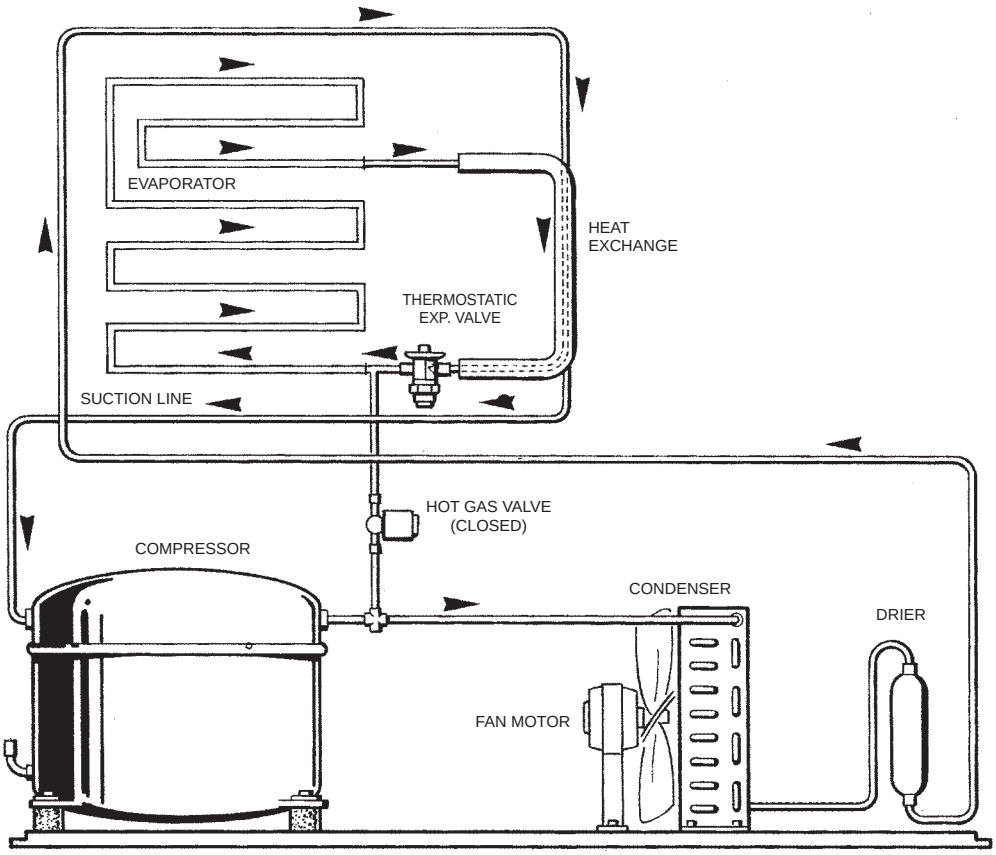
7. Check operation of magnetic switch controlling it by keeping open the bottom end of plastic deflector for more than 30 seconds. The machine must switch off at storage bin full.
Release the plastic deflector. The machine should restart in the freezing cycle mode within few seconds going through a 3' delay time.

8. Place again all cabinet panels and screws previously removed.

9. Thoroughly explain to owner/user the significant specifications of the ice maker start-up, reset and operation, going through the procedures in the operating instructions.
Answer all questions about the ice maker by the owner and inform the owner himseft of the name and telephone number of the authorized service agency serving him.

OPERATION

FREEZE CYCLE



REFRIGERATION SYSTEM SCHEMATIC

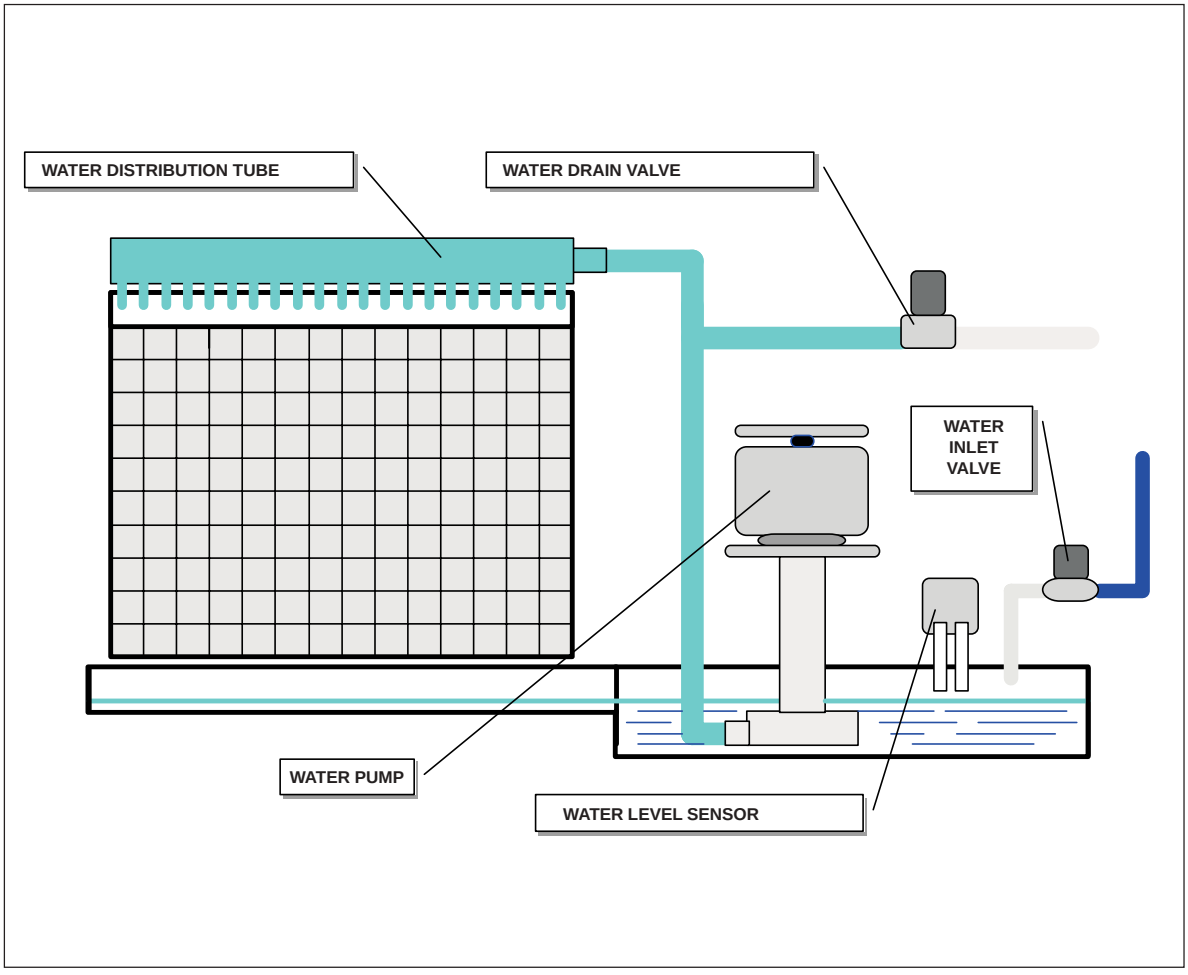
REFRIGERATION DURING FREEZE:

This ice machine employes either air or water as a condensing media, the refrigeration system for either one is a follows:
At the hermetic compressor, Refrigerant is compressed into a high temperature, high pressure gas.
The gas moves through the **discharge** line into the **condenser**, air or water-cooled. If air-cooled, the discharge pressure will change with the heat load and the ambient air temperature.
If water-cooled, the discharge pressure is controlled by the amount of water flowing through the **condenser** - which is determined by the water regulating valve.
After the gas is cooled in the condenser, giving up much of its heat, the gas condenses into a high pressure liquid. This liquid travels through the **liquid line** to the metering device, a **thermostatic expansion valve**.
The thermostatic expansion valve meters how much liquid refrigerant is to be allowed into the evaporator section of the refrigeration system.
This is determined by the temperature of the TXV sensing bulb, located on the **suction line** manifold, at the outlet of the **evaporator**.
If the bulb senses a warm suction line, more refrigerant is allowed into the evaporator, (common at the beginning of the freeze cycle) and when the temperature begins to fall, less refrigerant is allowed through.
This is why the suction side gauge pressure will decline throughout the freeze cycle. At the evaporator, the liquid refrigerant released from high pressure, boils off in the low pressure environment and absorbs heat, thus cooling the evaporator surface and anything near it, such as water.
The low pressure refrigerant vapor then is forced through the heat exchanger where any excess liquid refrigerant boils-off, allowing only refrigerant vapor to enter the compressor suction tube, where it is recompressed into high pressure, high temperature gas again and the cycle repeats.

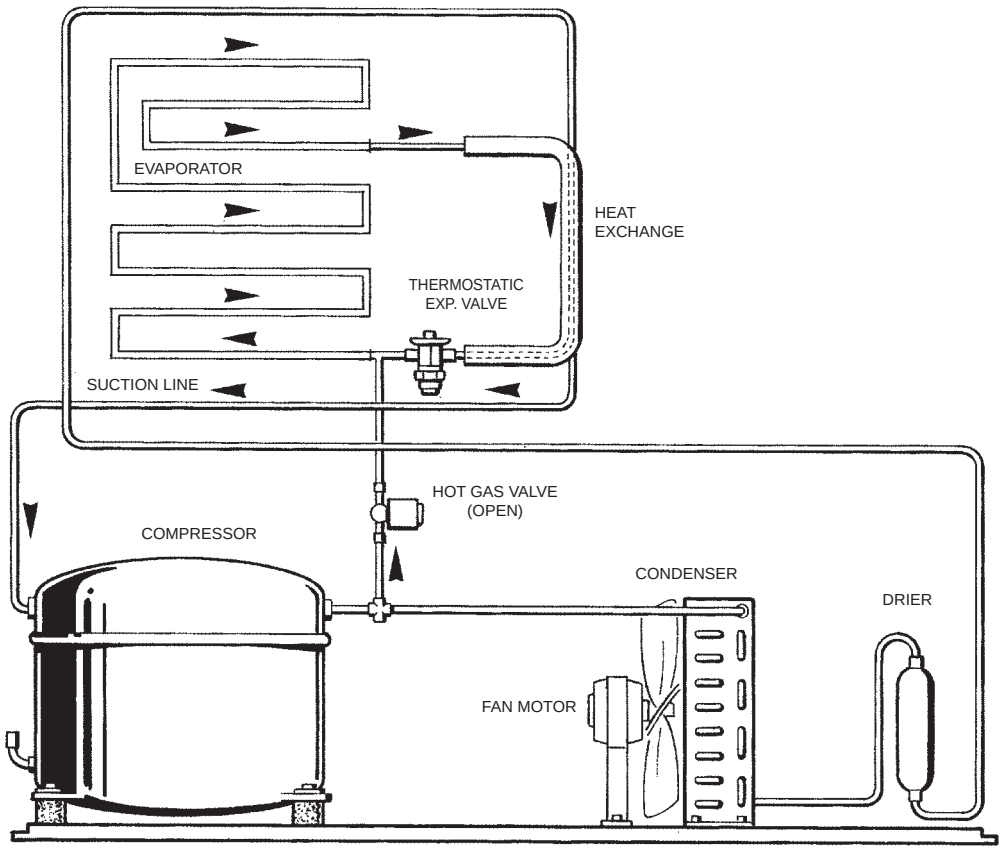
FREEZE CYCLE

WATER SYSTEM

A combination of a solenoid water inlet valve with a water level sensor is used to control the level of the water into the reservoir/sump.
A pump, running continuously, after the first 30" of freezing cycle, forces the water to the top of the evaporator, where it is distributed through a water tube and then cascades down the evaporator surface by gravity. As it flows accross the refrigerated evaporator, some of the water will be chilled enough to change form, turn to ice, and stay frozen onto the evaporator cells. Most of the water returns to the reservoir, to be sucked back into the pump, and repumped over the evaporator.



HARVEST (DEFROST) CYCLE



REFRIGERATION SYSTEM SCHEMATIC

REFRIGERATION SYSTEM DURING HARVEST

The refrigeration system performs the harvest of ice by use of a hot gas bypass valve. When the time comes to de-ice the evaporators, the hot gas valve is energized, and the high temperature, high pressure gas bypasses the condenser, and is allowed directly into the evaporator. The high pressure gas is cooled by the cold evaporator so it condenses into a liquid, giving up its heat as it does so. This heat warms the evaporator and the ice frozen onto the evaporator surface melts, releasing the frozen cubes. Ice then falls by gravity into the storage bin.
The liquid refrigerant goes through the suction line into the heat exchanger where it boils-off so that only refrigerant vapor is drawn into the suction tube of the compressor.

WATER SYSTEM

During the harvest cycle, the electric water drain valve is energized thereby opening the drain line.

All water remained in the reservoir at the end of freezing cycle is pumped-out, to the waste, through the water solenoid and drain line during the first 40 seconds of the defrost cycle eliminating any possible build-up and accumulation of minerals concentration and impurities in the water reservoir.
The water inlet valve is energized during the last 10" of the operation of the water pump so to rinse the water tank with new fresh water.
When the released ice cubes drop into the bin, they open-up for a fraction of a seconds the bottom end of plastic deflector.
This deflector swinging motion is enough to reset the contact of the magnetic switch which - via electronic control board - deenergizes the water drain valve allowing the unit to initiate a new freezing cycle.

The harvest cycle lasts about 1.5÷2 minutes.

CONTROL SEQUENCE

At the start of the freezing cycle, the contacts of the magnetic switch mechanically operated by

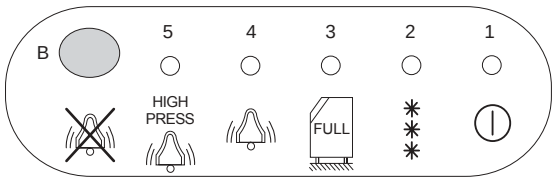
the actuator plate of the deflector cover are closed, thereby - via electronic control board - closing the circuit to the main contactor coil and consequently to the compressor and fan motors and 30" later, to the water pump motors.
Then, as the ice thickness reaches the value that corresponds to the full cube size, the film of water that constantly cascades over the slab of ice formed on the evaporator, arrives to establish a contact between the two fingers (energised at low voltage) of the ice sensor control, located on the front upper right side of the evaporator. If the contact between the two fingers of the ice sensor remains established - by the film of water - for more than 10 seconds, a small relay of the electronic board, get energized, controlling - simultaneously both the hot gas valve and the water drain valve.

> ***NOTE:*** *in case of failure of ice level sensor, the P.C. Board turns - on automatically the unit into the defrost cycle when the freezing cycle reaches 30 or 40 minutes according to the operation of the fan motor during the freezing cycle.*

At this point, the unit initiates the defrost cycle. The hot gas circulating into the evaporator serpentine causes a slight melting of ice cubes which get released from their molds. Once entirely released the ice cubes drop simultaneously into the ice storage bin below; by doing so they move apart from the evaporator bottom end the plastic deflector. This plastic deflector has on its side a magnetic switch that on account of the deflector swinging motion, caused by the ice while dropping in the bin, opens and closes their contacts. This will, in turn, disactivate the relay contacts that controls the hot gas and water drain valve which get deenergized allowing the unit to start a new freezing cycle.

When the ice bin is full of ice, the last batch of ice cubes released from the evaporator accumulates to keep the bottom end of the plastic deflector in open position; with the magnetic switch contacts open for longer than 30' the entire unit stops with the glowing of the corresponding LED.
The machine will restart when the ice deflector will be back in its normal vertical position provided that 3' are elapsed from unit stop. If not the machine will delay its restart till 3' are elapsed with the blinking of the green LED.

ALARM CONDITIONS

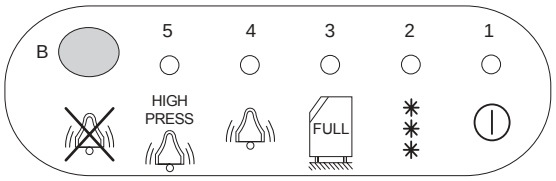


Both the last two **Red LED** are **ON STEADY: Condenser Sensor OUT OF ORDER.**

Both the last two **Red LED** are **BLINKING SLOW: WATER ERROR**

Water level inside the water sump too low after 3' from the activation of the Water Inlet Valve.

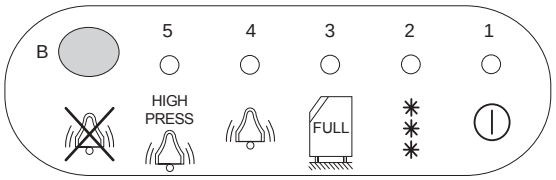
Both the last two **Red LED** are **BLINKING FAST:** *RESET MODE: Charging water through the Water inlet Solenoid Valve after the tripping OFF on WATER ERROR*



The fourth **Red LED** is **ON STEADY: Harvest Cycle longer then 3' 30"**

The fourth **Red LED** is **BLINKING SLOW: TOO HI CONDENSING TEMPERATURE.** The condenser sensor detected a temperature **> 65°C**

The fourth **Red LED** is **BLINKING FAST:** *RESET MODE: Condenser Sensor < 50°C Fan motor in operation for 3' then back on Start Up Cycle Mode*



The fifth **Red LED** is **ON STEADY: TOO HI DISCHARGE PRESSURE > 33 bar 460 PSI**

The fifth **Red LED** is **BLINKING FAST:** *RESET MODE: After pushing the Reset Button of the Pressure Control first the fan motor starts up for 3' then back on the Start Up Cycle Mode.*

The PC Board is also checking the maximum time of the freezing cycle that changes according to the operation of the fan motor during the freezing cycle (room temperature):

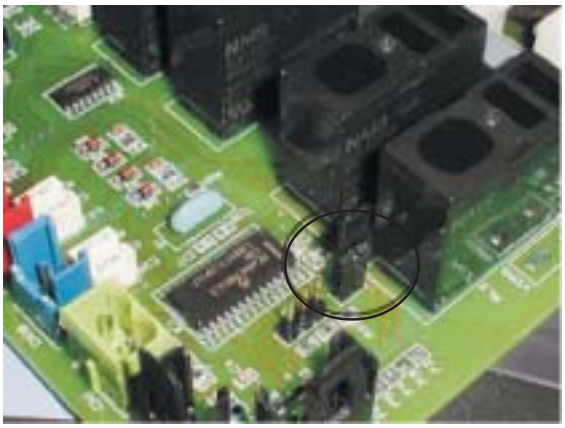
- Fan motor in ON-OFF mode:	**Max. freezing cycle length equal to 30'**
- Fan motor ON All the time:	**Max. freezing cycle length equal to 40'**

Whenever the machine remains in the Freezing Cycle for the Maximum time (30 or 40 minutes), the PC Board moves the unit directly into the Harvest Cycle.

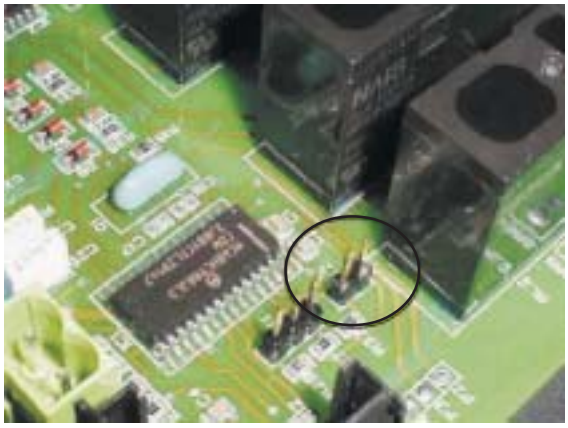
PC BOARD SET UP

The PC Board can be set up for:

• **Manual Reset Mode (Jump IN)**

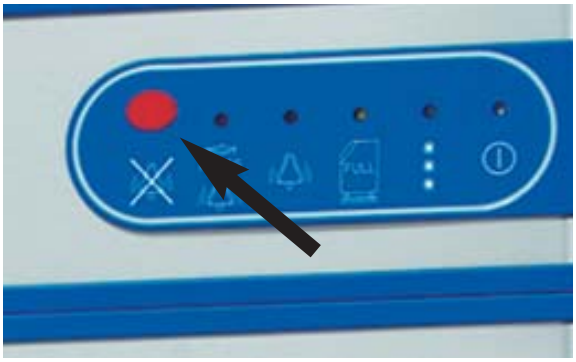


• **Automatic Reset Mode (Jump OUT)**



MANUAL RESET MODE

To **Restart the machine** it is necessary to Push the **RESET BUTTON**



AUTOMATIC RESET MODE

The **Automatic Reset Mode** is activated only for the following **ALARM CONDITIONS:**

- **WATER ERROR**
- **TOO HIGH CONDENSING TEMPERATURE**
- **TOO LONG HARVEST CYCLE**

WATER ERROR

The machine remains in OFF mode for 30' then it tries to re-fill water:

YES: Machine remains in operation

NO: Machine again in OFF mode for additional 30'

TOO HI CONDENSING TEMPERATURE:

As soon as the temperature of the Condenser Sensor is < 50°C, the PC Board starts up first the fan motor for 3' then the entire machine through the Start-Up Cycle Mode.

TOO LONG HARVEST CYCLE:

After the 3' 30" of the Harvest Cycle, the PC Board move back the machine into a new Freezing Cycle.

SERVICE SPECIFICATION

In servicing a machine, it is often, useful to compare that individual units operating characteristics to those of a normally operating machine. The data that follows gives those characteristics; however, be aware that these values are for NEW, CLEAN machine operating at 21 °C ambient and 15 °C water. USE THESE NUMBERS AS A GUIDELINE ONLY.

COMPONENT

Reservoir level .....75÷80 mm

Cube Size Control Ice Sensor - distance from evaporator .....4 ÷ 5 mm

High Pressure Safety Switch
N131M: Cut out 30 bar - Cut in 19 bar

N201M - N301M - N401M - N501M:
Cut out 33 bar - Cut in 23 bar

OPERATING CHARACTERISTICS

On air-cooled models during the freezing cycle, the discharge pressure is maintained between two preset values by means of fan control (condenser sensor); and at the same time, the suction pressure will also decline reaching it's lowest point just before harvest. Compressor amps experience a similar drop.
On water-cooled, the discharge pressure is constantly, maintained during the freeze cycle by the water regulating valve. However, suction pressure and compressor amps, will still decline as the machine freezes ice.

MODEL	Disch. Pressure Freeze Max	Disch. Pressure Freeze Max	Hi Pressure CUT OUT	Suction Pressure beginning Freeze	Suction Pressure end Freeze	Freezing time	Amps Compressor beginning Freeze	Amps Compressor end Freeze	Water use
N 131 A	17.5 bar	14,0 bar	30 bar	4,3 bar	2,3 bar	15'	3,8	3,2	12,5
N 131 W	16,5 bar	16,5 bar	30 bar	4,3 bar	2,4 bar	16'	3,6	3,1	63,0
N 201 A	17,0 bar	15,0 bar	33 bar	3,6 bar	2,3 bar	16'	4,2	3,4	14,0
N 201W	16,2 bar	16,0 bar	33 bar	3,8 bar	2,5 bar	16'	3,9	3,3	79,0
N 301 A	18,0 bar	16,0 bar	33 bar	2,9 bar	1,7 bar	11'	7,0	5,2	19,5
N 301 W	16,5 bar	16,0 bar	33 bar	2,9 bar	1,7 bar	11'	6,5	5,2	115,0
N 401 A	18,5 bar	15,5 bar	33 bar	2,9 bar	1,5 bar	11,5'	3,9	3,0	27,0
N 401 W	16,5 bar	16,5 bar	33 bar	2,9 bar	1,7 bar	11,5'	3,4	2,6	134,5
N 501 A	18,0 bar	15,5 bar	33 bar	3,2 bar	1,7 bar	12,5'	4,0	3,1	59
N 501 W	16,5 bar	16,5 bar	33 bar	3,2 bar	1,9 bar	13'	3,5	2,7	145

Charge de réfrigérant R 404 A

MODEL	N 131 M	N 201 M	N 301 M	N 401 M	N 501 M
Air cooled	500	700	850	1300	1600
Water cooled	400	500	550	1000	1200

Refrigerant metering device

Thermostatic expansion valve.

NOTE: *Always check nameplate on individual icemachine for special refrigerant charge before charging the refrigeration system. Such refrigerant charge is the average charge for the Icematic Modular Cubers. However it is important to check nameplate for each machine.*

COMPONENT DESCRIPTION

1. Front Console Panel

Equipped with five LED plus a push button that when glow or blink are monitoring:

LED Nr. 1
Electrical power supply.

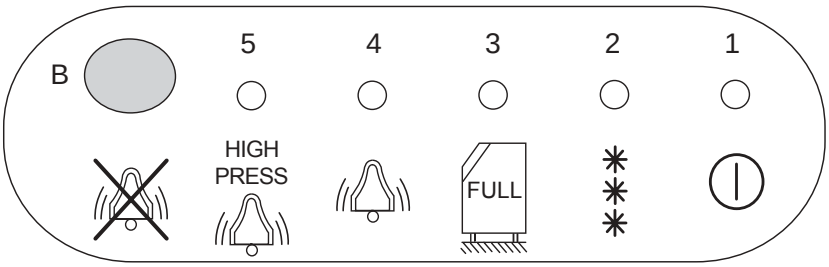
LED Nr. 2
Operation.

LED Nr. 3
Bin full./Washing.

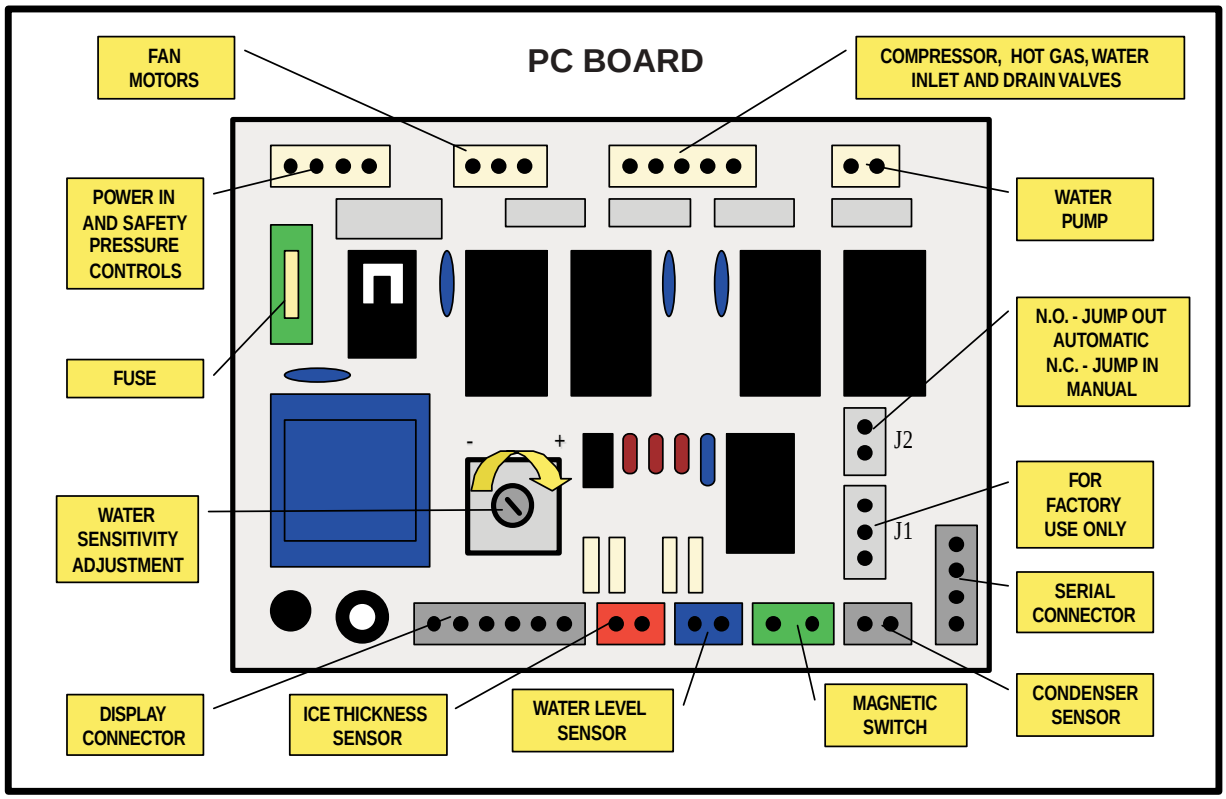
LED Nr. 4
Alarm.

LED Nr. 5
Alarm high pressure.

BUTTON B
Reset/Washing.



M SERIES



2. P.C. Board

Located in the control box, this board is the brain of the system as it governs the ice machine cyclematic through sensors, relays and switch. It consists of two separated printed circuits one at high and the other at low voltage integrated with a fuse, of four connectors for the sensors/switches (condenser sensor - BLACK -, magnetic switch - GREEN - ice thickness sensor - RED - water level sensor - BLUE), of two jumpers (one J1 for factory use only - and the second J2 for the selection between manual or automatic reset mode), of one outlet connector (front LED display - black) one serial port connector (black) and of four plug in terminals for input and output power. With J2 closed the P.C. Board is set up for Manual reset mode. When J2 is open on Automatic Reset mode.
The P.C. Board is equipped by an electronic safety timer that turns-on automatically the unit to defrost cycle when freezing cycle is longer then 30 or 40 minutes and trips-off completely unit when defrost cycle is longer then 3,5 minutes (4th Red LED ON).
A trimmer, located close to the transformer, can change the current received back from the Ice Tickness Sensor according to the Electrical Conductivity of the water.

3. Compressor Contactor

Located in the control box, the compressor contactor functions to carry the compressor line current. The contactor is wired to receive power from the P.C. Board.

4. **Ice Thickness Sensor**

Located in the front upper right side off the evaporator, the sensor is made with two metal reeds in which passes power at low voltage. The two metal reeds, which are individually insulated, are set, through a setting screw, to maintain a minimum clearence from the evaporator (3÷5 mm). Once ice is formed into each mold and is thick enough to fill-up that minimum clearance existing between the two sensor reeds and the evaporator, the water that cascades over the ice has gradually approached to make contact between the two sensor reeds.
It is enough that this contact remains there for about 10 seconds that the P.C. Board receives the signals to put the ice machine on defrost.

5. **Magnetic Switch**

Located in the front of the evaporator plastic curtain, this switch sends a pulse to the P.C. Board which switches the machine back in the freezing cycle.

6. **Hot Gas Solenoid Valve**

The Hot Gas Solenoid Valve functions only during the Harvest Cycle, to divert the hot discharge gas from the Compressor, bypassing the Condenden-ser and thermostatic expansion valve, for direct flow to the Evaporator Platen Assembly to release ice cubes from the ice cube molds.
The Hot Gas Solenoid Valve is comprised of two parts, the Body & Plunger and the Coil assembles. Installed in the discharge line of the Compressor, the energized solenoid coil lifts the valve stem within the valve body to cause the hot discarge gas to be diverted when the ice Thickness sensor has signalled to the P.C. Board to start the Harvest Cycle.

7. **Condenser temperature sensor**

The condenser temperature sensor probe (located in contact with the condenser tube coil) detects the condenser temperature variations and signals them by supplying current, at low voltage, to the P.C. BOARD.
In the air cooled versions, in relation to the different current received, the micro processor of the P.C. BOARD supplies, through a TRIAC, the power at high voltage to the fan motor so to cool the condenser and to reduce its temperature.
In case the condenser temperature rises and reaches **65°C (150°F)** the current arriving to the micro processor is such to cause an immediate and total stop of the machine operation with the **blinking of the Red LED.**

8. **High Pressure Control**

The high Pressure Control, a safety control, is factory set to cut-out, at 30 bar and cut-in at 22 bar. The control, functions as a precautionary device to shut OFF electrical power to Icemaker, should a loss of water occur to the water cooled Condenser or a burnt out of the fan motor on air cooled versions. The high Pressure Control is manual reset with reset button located on the rear side of the machine and a monitoring light on the Front Console Panel.

9. **Water Regulating Valve (Water Cooled Models)**

The Water Regulating Valve functions maintain a constant Compressor head pressure, by regulating the amount of incoming water flow through the Condenser, on water-cooled models. The valve operate through the refrigerant system high side pressure. Rotating the adjusting screw located on top of the valve, can INCREASE or DECREASE the water flow through the water-cooled Condenser, which in turn, will DECREASE or INREASE the Compressor operating head pressure.

10. **Water Distribution System**

The Water Distribution System function to eventy supply water to all cells of the evaporator plate. The water pump pumps water from the sump to the tee. From there water is channeled through the vertical tygon tube to the water distributors, above the evaporator plate, and from the holes in the distributor tube water flows to the cells on one side of the evaporator plate.
Gravity flow returns the unfrozen excess portion of water to the sump reservoir for recirculation.

11. **Water Drain Solenoid Valve**

The Water Outlet Solenoid Valve functions in conjunction with the water pump to flush-out the sump assembly at the beginning (first 40") of every harvest cycle. This action cleans-up and rinses the sump during each harvest cycle pre-venting dangerous water minerales concentration.

12. **Thermostatic Expansion Valve**

The Thermostatic Expansion Valve regulates the flow of refrigerant to the evaporator and reduces pressure of liquid refrigerant from condensing pressure to evaporating pressure.

13. **Water pump**

The water pump primes the water from the sump to the water distributor tube and through the distributing holes it cascades down onto the evaporator cells by gravity so to be frozen into clear ice cubes. The water pump remains off during the first 30" seconds of the freezing cycle (to avoid any cavitation problem) while it's kept running during the first 40" of defrost/harvest cycle to drain out (purge) the remaining water from the sump (reach in mineral salts).

14. **Water inlet solenoid valve - 3/4" male fitting**

The Water Inlet Solenoid valve is energised by the P.C. Board during the beginning of the freezing cycle till the water reaches the maximum level into the sump (controlled by the Water Level Sensor).
After 3 minutes, from the start up of the freezing cycle, the Water Inlet Valve is energised again for a short period to re-fill the sump with water till

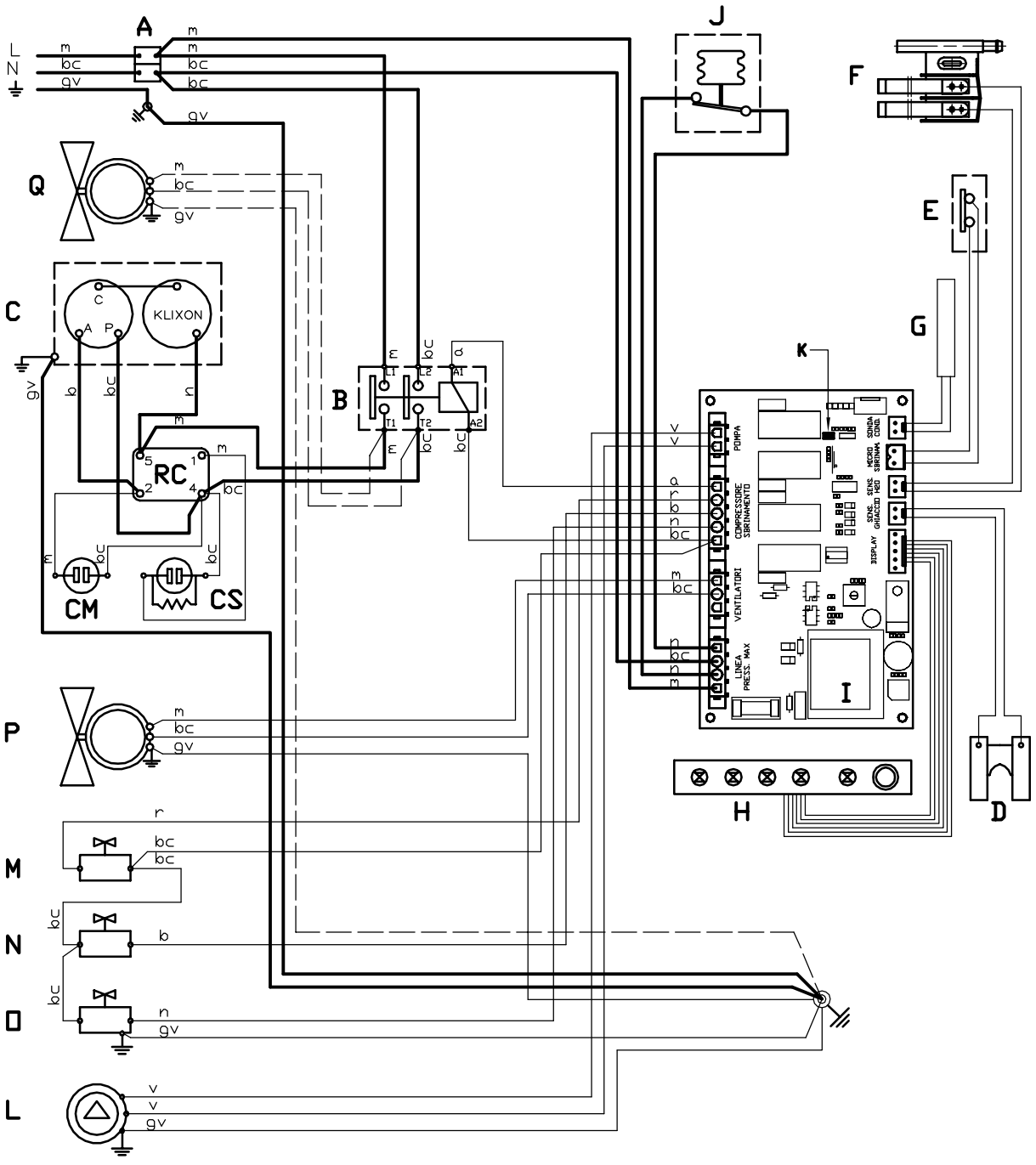
again to the max. level so to minimise any possibility of slush ice formation
A flow control, fitted into its outlet port, reduces the pressure of the water flow.

15. **Water level sensor**

The Water Level Sensor, located on the upper right side of the water sump, works in conjunction with the P.C. Board in order to control the water level at beginning of the freezing cycle by receiving a low power current passing through the water. When the current reaches the PC Board, the water inlet solenoid valve is de-energised.
In case the PC Board doesn t receive any signal (current) from the Water Level Sensor within the first 3 minutes of the freezing cycle, the PC Board trips OFF the operation of the machine with the switching ON of the Water Error LEDs.

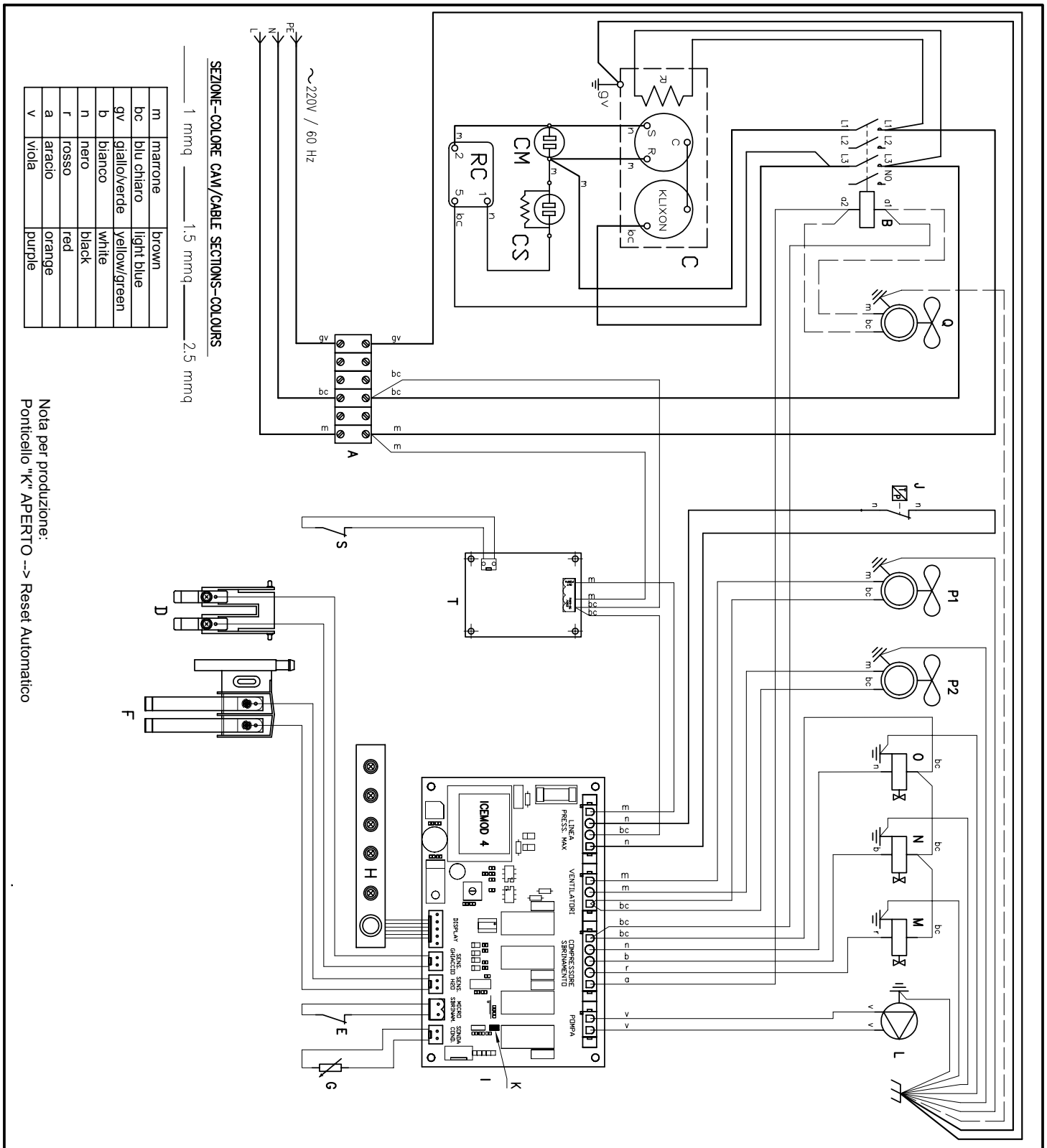
N 131 M - N 201 M - N 301 M - WIRING DIAGRAM
220 V. 50 Hz. 1 ph.

m = brown
bc = light blue
gv = yellow green
b = white
n = black
r = red
a = orange



A - Input terminal board
B - Compressor contactor
C - Compressor
D - Ice sensor
E - End defrosting switch
F - Water level sensor
G - Condenser temperature probe
H - Led card
I - PC Board
J - Hi pressure switch
K - Manual/Automatic reset jumper
L - Water pump
M - Water inlet valve
N - Water drain/purge valve
O - Hot gas valve
P - Fan Motor (only AIR cooled unit)
Q - Fan Motor (only WATER cooled unit)
RC - Compressor relay
CS - Start capacitor
CM - Run capacitor

N 401 M - N 501 M - WIRING DIAGRAM
220 V / 50-60 Hz / 1 ph



A	MORSETTIERA INGRESSO INPUT TERMINAL BOARD
B	TELERUTTORE COMPRESSORE COMPRESSOR REMOTE CONTROL SWITCH
C	COMPRESSORE COMPRESSOR
CS	CONDENSATORE AVVIAMENTO START CONDENSER
CM	CONDENSATORE MARCIA RUN CONDENSER
RC	RELE' COMPRESSORE COMPRESSOR RELAY
D	SENSORE GHIACCIO ICE SENSOR
E	MICRO FINE SBRINAMENTO END DEFROSTING SWITCH
F	SENSORE LIVELLO ACQUA WATER LEVEL SENSOR
G	SONDA TEMPERATURA CONDENSATORE CONDENSER TEMPERATURE PROBE
H	SCHEDA LED LED CARD
I	SCHEDA ELETTRONICA ELECTRONIC CARD
J	PRESSOSTATO DI MASSIMA MAX PRESSURE SWITCH
K	PONTICELLO RESET AUTOMATICO AUTOMATIC RESET SWITCH
L	ELETTROPOMPA WATER PUMP
M	ELETTROVALVOLA CARICO ACQUA WATER INLET VALVE
N	ELETTROVALVOLA SCARICO ACQUA WATER DISCHARGE VALVE
O	ELETTROVALVOLA GAS CALDO HOT GAS VALVE
P1	VENTILATORE 1 (solo raffr. ARIA) FAN MOTOR 1 (only AIR cooled unit)
P2	VENTILATORE 2 (solo raffr. ARIA) FAN MOTOR 2 (only AIR cooled unit)
Q	VENTILATORE (solo raffr. ACQUA) FAN MOTOR (only WATER cooled unit)
R	RESISTENZA RISCALDAMENTO CARTER COMPRESS. CRANCKASE HEATER
S	INTERRUTTORE RISCALDAMENTO CARTER SWITCH CRANKCASE
T	SCHEDA ELETTRONICA RITARDO AVVIAMENTO TIMER ELECTRONIC BOARD

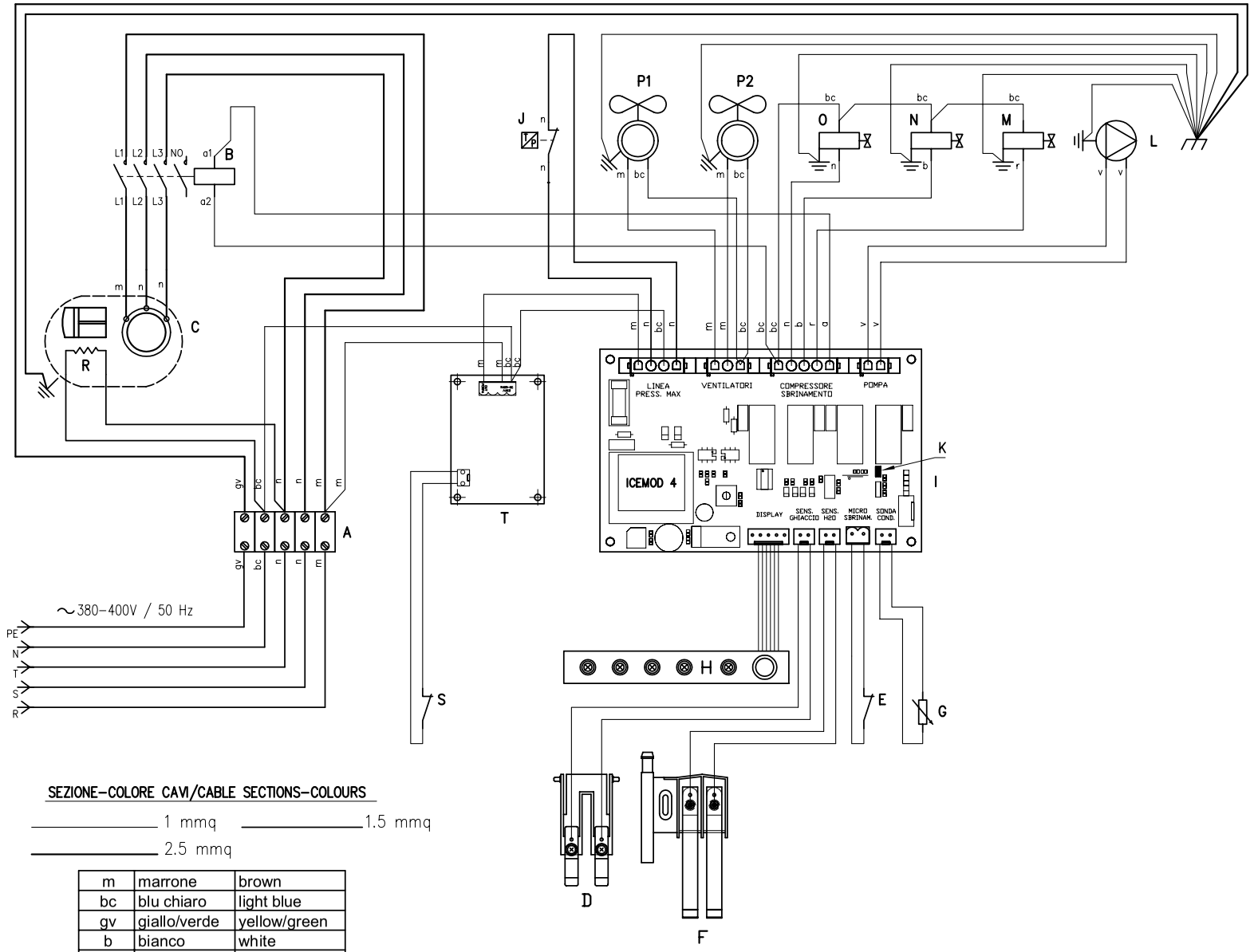
SEZIONE-COLORE CAVI/CABLE SECTIONS-COLOURS

1 mmq ——— 1.5 mmq ——— 2.5 mmq

m	marrone	brown
bc	blu chiaro	light blue
gv	giallo/verde	yellow/green
b	bianco	white
n	nero	black
r	rosso	red
a	aracio	orange
v	viola	purple

Nota per produzione:
Ponticello "K" APERTO --> Reset Automatico

N 401 M - N 501 M - WIRING DIAGRAM
380-400 V / 50 Hz / 3N



A	MORSETTIERA INGRESSO INPUT TERMINAL BOARD
B	TELERUTTORE COMPRESSORE COMPRESSOR REMOTE CONTROL SWITCH
C	COMPRESSORE COMPRESSOR
D	SENSORE GHIACCIO ICE SENSOR
E	MICRO FINE SBRINAMENTO END DEFROSTING SWITCH
F	SENSORE LIVELLO ACQUA WATER LEVEL SENSOR
G	SONDA TEMPERATURA CONDENSATORE CONDENSER TEMPERATURE PROBE
H	SCHEDA LED LED CARD
I	SCHEDA ELETTRONICA ELECTRONIC CARD
J	PRESSOSTATO DI MASSIMA MAX PRESSURE SWITCH
K	PONTICELLO RESET AUTOMATICO AUTOMATIC RESET SWITCH
L	ELETTROPOMPA WATER PUMP
M	ELETTROVALVOLA CARICO ACQUA WATER INLET VALVE
N	ELETTROVALVOLA SCARICO ACQUA WATER DISCHARGE VALVE
O	ELETTROVALVOLA GAS CALDO HOT GAS VALVE
P1	VENTILATORE 1 (solo raffr. ARIA) FAN MOTOR 1 (only AIR cooled unit)
P2	VENTILATORE 2 (solo raffr. ARIA) FAN MOTOR 2 (only AIR cooled unit)
R	RESISTENZA RISCALDAMENTO CARTER COMPRESS CRANCKASE HEATER
S	INTERRUTTORE RISCALDAMENTO CARTER SWITCH CRANKCASE
T	SCHEDA ELETTRONICA RITARDO AVVIAMENTO START DELAY ELECTRONIC BOARD

SEZIONE-COLORE CAVI/CABLE SECTIONS-COLOURS

1 mmq — 1.5 mmq

2.5 mmq

m	marrone	brown
bc	blu chiaro	light blue
gv	giallo/verde	yellow/green
b	bianco	white
n	nero	black
r	rosso	red
a	aracio	orange
v	viola	purple

NOTA X PRODUZIONE:

PONTICELLO K= APERTO (Reset Automatico)

SERVICE DIAGNOSIS

The table below is intended as a quick reference to aid the Service Agent in determining the cause of a particular type of malfunction, as well as the recommended repair. It is not intended to be an exclusive list.

Reference to other portions of this manual, inclusing wiring diagrams, installation, and operation are recommended to better determine the cause of a problem.

SYMPTOM	POSSIBLE CAUSE	CORRECTION
Warning Red LED ON	See page 20	See page 20
No warning LED/LIGHT ON	P.C. Board inoperative.	Remove board and check.
	No power to unit.	Check electrical source.
Bin full Yellow LED ON	Bin Full of ice.	Nome.
	Magnetic switch inoperative.	Check and replace.
Machine runs, compressor does not.	P.C. Board compressor relay open.	Test and replace.
	Compressor contactor open.	Test and replace.
	Compressor relay open.	Test and replace.
	Compressor winding open.	Test and replace.
Machine runs, makes ice, does not try to harvest.	Ice thickness control open.	Check sensor fingers if are not covered with scale sediment.
	Too soft water.	Water electrical conductivity must be higher then 20 μS. Machine can't run with demineralized water.
	Built-in relay on P.C. Board open.	Check and replace P.C. Board.
Machine runs, makes and harvests ice but very slowly.	Low refrigerant charge.	Check system for correct refr. charge. Check for leak weight in charge.
Low ice capacity.	High discharge pressure due to not-condensable or overcharge.	Evacuate and weigh in charge.
	Inefficient compressor.	Replace.
	Condenser dirty.	Clean.
	Low water flow (Water-cooled).	Check and repair.
	High air temperature (air-cooled).	Check temperature of air entering condenser.
Machine makes irregular ice.	Plugged water distributor.	Clean water distributor.
	TXV supertheat wrong.	Adjust or replace.
	Refrigerant charge low.	Adjust-check for leak. recharge.

MAINTENANCE & CLEANING & SANITATION INSTRUCTIONS

A ICEMATIC Ice System represent a sizable investment of time and money in any company's business. In order to receive the best return for that investment, in MUST receive periodic maintenance.
It is the USER'S RESPONSIBILITY to see that preferable, and less costly in the long run, to avoid possible down time by keeping it clean, adjusting it as needed and by replacing worn parts before they can cause failure. The following is a list of recommended maintenance that will help keep your machine running with a minimum of problems.
Maintenance and Cleaning should be scheduled at MINIMUM twice per year while sanitation once per month.

ICEMAKER

THE FOLLOWING MAINTENANCE SHOULD BE SCHEDULED AT LEAST TWO TIMES PER YEAR ON THIS ICEMAKER. CALL YOUR AUTHORIZED ICEMATIC SERVICE AGENCY.

1. Check and clean or service any optional water treatment devices, if any installed.

2. Clean water strainer.

3. Check that the cabinet is level, in the side-to-side and front-to-back directions.

4. Clean/Sanitise the water system, evaporator plate and sump assembly, using a solution ot Citric Acid. Refer to CLEANING - Icemaker.

NOTE: *Cleaning/Sanitising requirements vary according to local water conditions and individual user operation.*
Continuous check of the clarity of ice cubes and visual inspection of the water system parts, evaporator plates and the sump assembly before and after cleaning will indicate frequency and procedure to be followed in local areas.

5. Check and tighten all bolts and screws.

6. Check for water leaks and make corrections.

7. Check the bin control to test shut-off.
Holding the evaporator deflector in open Position for more that 30", shold cause the ice maker to shut-off.
Once the evaporator deflector is released in its closed position, the ice maker will restart.

8. Check cube size, adjust if required through setting screw of ice thickness control sensor.

9. With unit out of operation, clean the condenser using vacuum, cleaner, wisk broom or brush.
Instruct customer to clean condenser frequently DO NOT USE A WIRE BRUSH.

ICE STORAGE BIN

The interior liner of the bin is in contact with a food product, ice, and should be cleaned and sanitised regularly. Once a week sanitise it with a commercial food grade sanitiser compling with the manufacturer dilution.

CABINET EXTERIOR

Wipe clean unit and bin cabinet exterior with a clean cloth or disposable paper wipers, soaked in warm water with mild detergent solution.

CLEANING - Ice maker

1. Empty bin of ice.

2. Remove front panel.

3. Wait till the end of the defrost/harvest cycle then push the RESET BUTTON for 6-8 seconds. The machine should stop with the blinking of the Yellow LED (slow blink).

4. Pour 150 gr for N131M and 250 gr for other models of citric acid directly into the reservoir then push again the **RESET BUTTON** for a while. The water pump starts to operate with the fast blinking of the Yellow LED while the water inlet valve will be energized

5. After 15 minutes push the RESET BUTTON for a while. The P.C. Board put the machine in automatic rinsing mode with the special blinking (blink twice and repeat) of the Yellow LED.

NOTE: *RINSING mode consists of:*
a) energize the water drain valve and the water pump for 40 seconds to empty the reservoir
b) deenergize the water drain valve and the water pump for 1 minute
c) energize the water inlet valve till the fill up of the water sump
d) energize the water pump for 1,5 minutes.
The above sequence is repeted 7 times so to be sure to have removed any possible trace of citric acid.

6. At the end of the 7th Rinsing cycle the P.C. Board stops the operation of the machine with the blinking (slow) of the Yellow LED.

7. Pushing the RESET BUTTON for 6-8 seconds the machine restarts in the freezing cycle.

8. Replace the evaporator cover deflector and front panel.

9. Check the next batch of cubes to be sure all the cleaner is gone (no sour taste).

CAUTION - DO NOT use ice cubes produced from the cleaning solution. Be sure none remains in the bin.

10. Pour hot water into the storage bin melt the cubes, and to also clean the bin drain.

Notes:

Notes:

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